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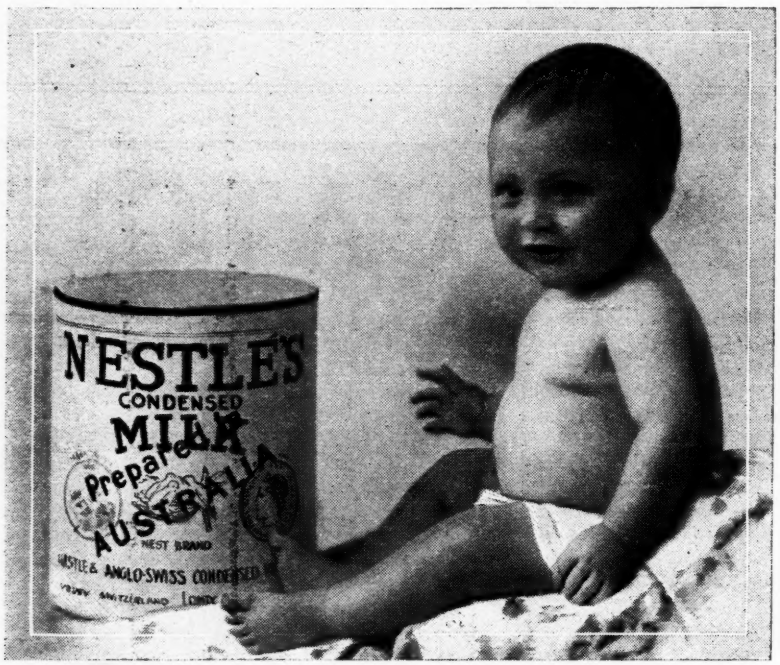

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NOTES ON 200 CASES OF SUB-TOTAL HYSTERECTOMY.[1]

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The following notes are based on a review of 200 consecutive cases of sub-total hysterectomy. The great majority were cases of fibro-myoma. In a small percentage the operation was performed for hæmorrhages in cases of *fibrosis uteri* and in another small percentage of cases the operation was performed as a procedure preliminary to fixing the cervix to the abdominal wall in cases of obstinate prolapse of the uterus. I propose first to deal with the subject in a general way and then to give an account of some of the difficulties I have met with and of the methods which have been found to be most useful in dealing with or preventing such difficulties. It is not necessary to give details of the whole operative procedure in any case. It will be sufficient to pick out the main points of interest. Some of the points touched upon may appear common-place or trivial, but success is largely contributed to by attention to such minor details. In all cases when the patient is under the anæsthetic immediately before the abdomen is opened, the rule is now observed to place the patient in the lithotomy position not only to cleanse the passages, but at the same time to permit a final bimanual examination and an inspection of the parts. In some cases the examination on which the diagnosis is founded, has been made some weeks or a month beforehand and, if such a final examination is not made, valuable information may be lost. Such an examination would, for instance, tend to prevent one from overlooking the presence of early pregnancy in a case of large multiple myomata—a complication which will be referred to later in one of my cases.

The Incision.

In opening the abdomen the operation is rendered easier by carrying the incision right down to the *symphysis pubis*. The work has to be done largely in the pelvis and I have seen great difficulty caused through operators trying to work deep in the pelvic cavity through a higher incision. This difficulty has immediately vanished when the opening of the abdomen has been extended a few more centimetres to the pubes. When incising the peritoneum, if the pubic end appears thickened and the bladder is in possible danger of being injured, the incision is often deflected at an angle to one side, so as to divide the peritoneum paravesically. It is a disadvantage in some of these cases to use a broad speculum, such as Fritsch's, transversely just above the pubes. By its rigidity it tends to hamper the work which has to be done deep in the pelvic cavity and it necessitates a larger incision in the abdominal wall. The self-retaining double retractor with its handle towards the umbilicus has been found to be most generally useful. The abdominal cavity should be well packed off, not only to prevent exposure of the intestines with possible shock, injury or infection, but also to prevent trouble and interruption during the operation if the patient takes the anæsthetic badly.

[1] Read at a Meeting of the Victorian Branch of the British Medical Association on August 6, 1919.

Hæmostasis.

In dealing with the ovarian and uterine vessels, in a few of the earlier cases it was the practice to ligature these with silk or catgut before dividing them. For some years, however, this practice has been discontinued. All the vessels are now clamped before division and after the tumour is removed, the vessels are ligatured. At this stage the arteries can be tied much more safely, because there is more room to deal with them and, as there is less tension on them, there is less danger of subsequent hæmorrhage through retraction of the tissues. The clamps used must be thoroughly reliable, otherwise it is possible that they may spring off a vessel and cause alarming hæmorrhage when one's attention is directed elsewhere.

In using these clamps on the upper part of the broad ligament, the one nearest to the pelvic wall should be applied first. This blocks the conductivity of the nerves running in the broad ligament and the inner clamps can be then applied without the same amount of trauma to the nervous system which would occur if they were applied in the opposite order.

Treatment of the Peritoneum.

It was the custom in a few of the earlier cases when the broad ligament was divided between the clamps on both sides, to seek for the division between the uterine and vesical peritoneum and to divide it with a knife or scissors. This was a comparatively clumsy way of dealing with the matter. The method now adopted is to run one blade of a blunt pointed scissors under the peritoneum at the bottom of the incision in the broad ligament on the right side and to pass it across, immediately under the peritoneum close to the uterus to the incision in the left broad ligament, dividing the peritoneum with the scissors as it passes along. This method enables one to get into the right plane at once and saves time and possible hæmorrhage. In a great majority of cases, there is no necessity to push the bladder downwards out of the way, as is advised in text-books. Such a procedure causes unnecessary trauma to that organ. If the uterus is being drawn up by a strong forceps, when the peritoneum is divided, there is a wide gap between the uterine and vesical peritoneum and the cervix can be easily cut across without interfering with the bladder in any way. These points are mentioned because some of the latest books describe and even illustrate methods of dissecting off the peritoneum from the anterior wall of the uterus. Some also describe the dissection of the peritoneum from the posterior surface of the uterus. Both are unnecessary and the latter may be positively harmful. When clamps are used on the vessels in the manner described, the operation is almost bloodless. Before

the amputation of the tumour is completed, the cervix is seized with tenaculum forceps and kept constantly in view. In the earlier cases it was the custom to tie the four cardinal vessels with silk; this, however, was soon changed and for years it has been the practice to ligature the uterine and ovarian vessels with chromic catgut. One ligature only is necessary for each of the four chief vessels. I have never used reinforcing ligatures in these cases and there has never been any subsequent hæmorrhage. The ligature which ties any of the main vessels, should do that and that only. Some later text-books describe ingenious ways of using the same ligatures for other purposes. Such a practice tends to pull the ligature off the vessel and should be avoided. In tying the ovarian arteries I use a sharp semi-circular needle, transfix the broad ligament below the vessel, turn the point of the needle upwards and transfix the broad ligament again above the vessel before tying or removing the clamp. This prevents any tendency of the ligature to slip off. Some months ago in a paper which appeared in the *British Medical Journal* a writer expressed the opinion that it was unwise to transfix the broad ligament when tying the vessels and stated that several cases of thrombosis which had come under his notice, were probably due to such transfixion. My experience is in direct opposition to this. It has been my custom for years to transfix both above and below the vessel, not only in the present series of cases, but in hundreds of other pelvic cases and I have never seen a case of thrombosis as a result. When the ligament is not transfixed, there is a more real danger of hæmorrhage from the ligature slipping off through retraction of the tissues or the straining effects of post-operative vomiting. All raw surfaces are carefully covered with peritoneum and in some complicated cases, special provision must be made to bring about this result. Where any part of the cellular tissue is left uncovered, the danger is not only that adhesions of a firm character may form with the intestine or with whatever organ comes in contact with the raw surface. A greater danger lies in the fact that the cellular tissue may continue to pour lymph into the peritoneal cavity and, if there is infection also, a not-unlikely complication from the vicinity of the bowel, the case is really one of cellulitis of the broad ligament discharging into the peritoneal cavity—a condition which may easily prove fatal.

Delivery of the Tumour.

I come now to cases of special interest or of special difficulty. Several cases, on account of their fixity in the true pelvis, caused difficulty in their delivery. These cases were of three different types. In the first type, although there were no adhesions present, the tumour so closely fitted the pelvis that there was considerable difficulty in its removal. This difficulty was largely due to atmospheric pressure and was to a great extent overcome by admitting air, as far as possible, around and beneath the tumour.

In the second type of case difficulty was caused for quite another reason. A large fibro-myoma had grown out from the left postero-lateral wall of the uterus, burrowing under the peritoneum, expanding and lifting up the broad ligament and giving the appearance at first sight of being adherent to the large bowel and wall of the pelvis. A mistake could easily have been made here by trying to separate the apparent adhesions. The result would have been that a large part of the bowel and the cellular tissue would have been left denuded of their peritoneal covering. When the real condition was recognized, the tumour was attacked from the right side of the pelvic cavity. The right ovarian and uterine vessels were controlled and divided, the peritoneum was cut across between the bladder and uterus, the cervix was divided from right to left and from before backward, the uterine arteries were clamped and divided and the peritoneum on the surface of the tumour was divided close to the uterus and conserved. The tumour was then enucleated from the broad ligament, care being taken to avoid injury to the ureter. The peritoneum was then sutured and the operation completed as usual.

In the third type of case, a fibro-myoma almost filling the pelvis caused considerable difficulty in its removal. The difficulty was due to extensive adhesions between the tumour and the bowel, pelvic-floor and broad ligament. These adhesions were separated with difficulty and caused a good deal of persistent oozing of blood after their separation. The wisdom of securing all accessible vessels and of being in a position to remove the tumour as quickly as possible before dealing with adhesions in inaccessible positions behind the tumour was exemplified in this case. When such precautions are taken, if hæmorrhage occurs, it will probably be less severe and can be dealt with more promptly. In this case persistent oozing occurred from many spots on the floor of the pelvis and several ligatures were necessary to control it. As a rule it is found that gauze pressure applied for a time while some other part of the operation is being carried out, is sufficient. This case, however, was an exception and required many ligatures placed under the bleeding points.

Intestinal Adhesions.

In a number of other cases difficulty was caused by the presence of adhesions between the small intestine and the surface of the uterus or uterine tumour. These adhesions were all broad and firm, not easily separated. Some were extensive. In one case they were the result of a previous myomectomy done some years before. The first death after operation in the whole series occurred in this case. Two adherent coils of small intestine were separated from the scars of the previous myomectomy. The gut seemed fairly healthy and was returned to the abdomen. The patient did well for three days and then developed a virulent peritonitis, which proved fatal. Since that time I have frequently left a thin slice of the tumour or of the uterine wall attached to the bowel in this class of case. This practice has, I think, saved several lives. A comparatively thick slice of uterus or tumour can be left attached to the bowel at first when removing the tumour. After removal is completed, the affected bowel can be brought up and the piece of attached uterus or growth pared down to a minimum. This procedure was successful in one case of extensive adhesion where otherwise it would have been necessary to resect the small intestine in large amount and in

more than one place in an anæmic subject who could not have stood such a resection.

In another instance the small intestine was adherent firmly not only to the uterine tumour, but also to an ovarian tumour and the uterine and the ovarian tumours were adherent to one another. In this case a very fine covering of both the uterine and ovarian tumours was left attached to the bowel with good results.

To my mind the likelihood of future adhesions is one of the main objections to the operation of myomectomy. Other myomata are almost certain to develope and the subsequent operation is attended by much greater danger than if no previous operation had been done. Although I often perform this operation, especially for small tumours, I do not like it, because it is felt that another operation may be necessary and that one is creating possible difficulties for the next operator.

Pregnancy Complicating Myoma.

The next class of cases to be considered were cases of fibro-myomata complicated with pregnancy. Two of these occurred in this series of cases. In the first the patient was an unmarried woman, about thirty years of age, who had been known to me personally for many years and in whose case I had not the slightest suspicion of a possible pregnancy. On examination the abdominal tumour was found to be large and presented several hard nodules. There was no doubt about the diagnosis of fibro-myoma. A digital examination *per vaginam* did not lead me to suspect pregnancy, although subsequent events proved that she was about two months pregnant at this time. She also concealed the fact that the hæmorrhages had been modified for the last two or three periods. A month later the operation was performed. The abdomen was opened without further vaginal examination. A large tumour consisting of multiple myomata was removed. It was noticed during the operation that the vessels were very large. After operation on opening the uterus a three months' fœtus was found implanted amongst the myomata. Since this case it has been the rule before opening the abdomen to place the patient in the lithotomy position and after cleansing the vagina to make an examination by inspection as well as bimanually.

In the second case complicated by pregnancy, the patient had had amenorrhœa for three months. Prior to that she had had hæmorrhages at the monthly period. A rounded movable tumour could be felt in the right iliac fossa, which was apparently either an ovarian growth or a sub-peritoneal myoma. The enlarged, ill-defined uterus could be felt in the centre and on the left side of this what was apparently a fibro-myoma could be felt. It was intended at the operation to remove the movable tumour on the right side and examine the tumour on the left side. It was thought that the right-sided tumour was probably a dermoid and could easily be removed and as the left one seemed to be high up on the wall of the uterus, it might be allowed to remain without further interference. There was no intention to disturb the pregnancy. At the operation, however, the right-sided tumour proved to be a movable fibro-myoma about the size of the fist, with a broad base about 8.75 cm. in diameter. The tumour on the left side was found to be a somewhat smaller intra-mural fibroid in the lower part of the antero-lateral wall of the uterus, a position which would prevent delivery *per vias naturales*. In addition it appeared impossible to remove this lower fibroid without opening into the uterine cavity and this tumour apparently was not so well defined as usual. There was also a third myoma present and possibly other small ones. All the tumours were very vascular. The right movable tumour could have been removed with a good deal of hæmorrhage and some difficulty with the vessels, but as all could not be removed without breaking into the uterine cavity, as delivery *per vias naturales* was obstructed and as the removal of the right tumour only, whether pregnancy were interrupted or not, would probably increase the difficulty of any future operation through the formation of adhesions and as a miscarriage seemed to be impending and fraught with danger, it was decided to perform sub-total hysterectomy and remove the tumours with the contained fœtus. After removal, it was found that the intra-mural tumour on the left side could not have been removed without opening the uterine cavity and that, therefore, sub-total hysterectomy would have been necessary in any case and that time was saved and hæmorrhage prevented by following the course we adopted. It was noticed on section that the intra-mural tumour was not nearly so well defined as in non-pregnant cases, although it had not undergone any degeneration.

Cervical Tumours.

The next case illustrates the difficulty caused by the presence of a cervical growth in a uterus which contained several other fibro-myomata. The cervical growth was a large one, about 8.75 cm. in diameter, filling and distending the vagina and presenting externally at the vulva. The patient was extremely anæmic, the most anæmic woman I have ever seen in connexion with tumours of this kind. She was prepared for the abdominal operation, but it was hoped that, on removing the growth presenting in the vagina, the hæmorrhages would be sufficiently controlled to allow the patient to recover somewhat from her anæmia and gather strength for a subsequent abdominal operation. In a few former cases of large polypoid growths distending and filling the vagina which had been removed *morcellement*, I had found that when the meridian of the tumour was passed, the removal became comparatively easy. The pedicle became plainly visible and as there was more room to deal with it, there was little further trouble. In the present case, however, after removing a large part of the presenting growth *morcellement*, it was disconcerting to find that there was apparently no meridian to the tumour and no pedicle, but that it continued to be of uniform diameter. It was also very fixed in its position and could not be pulled down in the slightest degree. Moreover, the patient was losing a little blood, which could ill be spared in her condition of intense anæmia. The abdomen was, therefore, opened and it was found that in addition to several tumours in the body of the uterus, the tumour which presented in the vagina expanded the lower part of the body of the uterus and the whole cervix to a diameter of about 8.75 or 10 cm.. Both broad ligaments were

then divided in the usual way, the utero-vesical peritoneum was cut across and the left uterine artery clamped near the cervix; the cervix was then cut across straight through the tumour, the right uterine artery was clamped and the upper mass of tumours removed. The cervical growth was found to have a broad attachment to the lower part of the uterus and to the cervix. The remaining part of the cervical growth was caught with strong forceps and some pieces removed. This allowed the fingers to be passed down into the vagina under the remains of the tumour. While an attempt to enucleate the remaining mass was being made and the growth was pulled up with the fingers, the dilated cervix turned inside out. The remaining pieces of the tumour were then easily removed, precautions having been taken to prevent infection from the vaginal part of the tumour. The cervix was reinverted into the vagina and in its stretched and dilated condition was more easily sewn up than in an ordinary case. The condition of this patient caused anxiety for some days. She had attacks of tachycardia with uncountable pulse on several occasions during the first 72 hours, apparently due to her anæmia, although at the time we suspected internal hæmorrhage. She then did well and later informed us that our anxiety was ill-founded, as she had had many similar attacks at times prior to the operation. This case illustrates the difficulty caused by a broad-based cervical growth. If there had been a pedicle the case would have been comparatively easy.

Uterine Prolapse.

The next class for consideration is cases of fibro-myomata complicated by prolapse. In some the prolapse was slight, in some very marked, causing a good deal of distress. In the slighter cases after removal of the tumour, care was taken to give as much support as possible to the remaining cervix by stitching the round ligaments to it and by stitching the upper part of the broad ligament in such a way as to contribute as far as possible to its support. Some help was also obtained by postural treatment, so as to insure that the parts were kept well up in position while the ligaments were healing. In some of the more severe cases of prolapse the remaining cervix was stitched to the muscles of the abdominal wall, fixing it firmly with chromic catgut. When this is done, care must be taken to see that the fascia is brought into good apposition in front of the muscle to obviate a tendency to hernia. In addition in cases of prolapse plastic operations on the perineum and supporting muscles and fasciæ were done as the cases demanded.

Some cases of fibro-myoma with prolapse in which the tumour was removed, but in which no attention was paid to the prolapse, have come under my notice from time to time. These patients are now suffering, if possible, more than before the operation for removal of the uterus. If the symptoms complained of by a patient, who has a fibroid, are the symptoms of prolapse and if she really suffers from prolapse, the removal of the tumour without anything further being done, may leave the patient in a worse state than before and the condition is much more difficult to deal with by operation. The operation of total-hysterectomy has a still worse result in these cases and the resulting condition is extremely difficult to deal with. I know of several such cases at present where the total operation has been performed in the past. A portion of the small intestine accompanied by a part of the bladder and of the large bowel occupies the place of the former prolapsed uterus, a condition of vaginal hernia. In these cases of prolapse of the uterus there is a tendency to prolapse of the other pelvic organs and of the small intestine above the uterus. The uterus, however, being a solid and easily palpable organ, is sometimes made the scapegoat and removed. By such a procedure we are in any subsequent operation deprived of the assistance of the most valuable ally in holding up the floor of the pelvis. The same thing applies to some extent in cases of proptosis of the abdominal viscera; the kidney being, like the uterus, a solid and easily palpable organ, gets most of the blame and pays the penalty.

In another class of this series the operation was done, as one of a number of measures, in cases of obstinate prolapse unaccompanied by tumour of any kind. Here it was done as a preliminary to fixing the cervix to the abdominal wall. In most of these cases the prolapse was due to the usual causes. Two cases, however, were exceptional. They were both in young women under thirty years of age, nulliparæ, one married, one single. Various operations had been done previously and were all unsuccessful. The ligamentous, muscular and fascial supports of the uterus were congenitally weak. These supports were strengthened as far as possible, the cervix amputated and, after removing the body of the uterus, the stump of the cervix was stitched to the recti muscles. The prolapse which had recurred several times, was completely relieved.

Fibrosis Uteri.

Another class of case in which the operation was found to be necessary, was that of *fibrosis uteri*. In some of these no tumour or enlargement of the uterus could be found, but the operation was necessary on account of repeated hæmorrhages which could not be stopped by less drastic measures. In other cases of fibrosis the operation was done under the impression that a small fibro-myoma was present. No distinct tumour could be felt, but the uterus was slightly enlarged, harder than normal, anteflexed and the subject of periodical hæmorrhages.

The true diagnosis could not be established until the body of the uterus was removed and the specimen examined after being opened with a knife. The sub-total operation relieved all the cases of hæmorrhage due to fibrosis. This experience does not accord with the opinion expressed by some authorities that pan-hysterectomy is necessary in these cases. That the sub-total operation is sufficient is what one would naturally expect from the physiology of the parts. The cervix has little to do with hæmorrhage of any kind from the uterus unless it is the site of a new growth. The sub-total operation is easier, safer, leaves a better floor to the pelvis, and any unhealthy condition of the remaining cervix can be dealt with by other methods.

General Remarks.

A few cases in the series may be mentioned on account of their enormous size. These very large

ones were cystic in their upper part and seemed to fill the abdominal cavity completely. They, however, presented no special difficulty at operation beyond the fact that a very large incision was required and that great care was necessary to prevent the enormous masses from slipping from the gloved hands and causing shock or rupture of vessels in the pelvic cavity.

Many other cases more or less abnormal might be described, but time does not permit of their discussion. A large majority of the cases, however, conformed to normal standards and require no special notice. There were two fatal cases in the whole series, a mortality of 1%. Both fatal cases had been operated on previously by others and death resulted from complications left by the former operations. In the first fatal case death was due to general peritonitis, the result of impairment of the vitality of the coats of the bowel from separating adhesions to the scar of a previous myomectomy.

The second fatal case had also been operated on previously by the vaginal route and was complicated by the presence of a recto-vaginal fistula. The cause of death was peritonitis, apparently due to an unexpectedly virulent infection of the cervix. Both deaths occurred in the first hundred cases. There were no deaths in the second hundred. In no case was operation declined. It is hoped, by adopting methods such as I have endeavoured to indicate in this paper, to save life in cases similar to the two fatal ones in the future.

THE EDUCATION AND CARE OF THE BLIND.[1]

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The education of the blind is a natural corollary of the law of the land which makes the education of children compulsory. In the earliest days the blind were neglected and they grew up to be a burden to the community, relying largely on charity for their mere existence. It has come to be recognized, however, that if suitable training be afforded to those so afflicted, they will not only, to a large extent, be able to earn their own living, but will also be able to render their lives more useful and happier. The greatest affliction of the blind is not their deprivation of vision, but the enforced idleness to which, in the absence of adequate instruction, they so readily become victims. The training of the blind child can be commenced in the *Kindergarten* years, that is to say, between the ages of four and seven. It must be remembered in connexion with the system of education that, although a blind person is not a sick person, there are frequently minor conditions of ill health or minor disabilities and also that, having fewer channels of perception and no knowledge being gained through their ophthalmic nerves, the blind pupil is frequently slower at learning than his sighted brother. A knowledge of reading, writing and arithmetic is the basis of the education scheme; other subjects are more or less subsidiary. The system of alphabetical representation invented by Braille, wherein each letter is represented by raised points in suitable groupings, is now in universal use. It readily adapts itself to hand production, to machine devices and to printing methods. It is also adapted to further uses, including the representation of numbers and the graphical notation of music. There is a large amount of all branches of literature available for the blind printed in Braille. Suitable devices enable the blind student to work out more or less abstruse problems in arithmetic. Thus as far as the "three R.'s" are concerned, the blind are on comparatively equal terms with the pupils of ordinary schools. Other subjects that are suitable for the blind are geography—relief maps are used in this connexion—knitting and sewing, modelling, sloyd work, natural science and music. The last mentioned is a subject readily learned by the sightless student and many prove very successful. Not only are the piano, organ, violin and other instruments capable of mastery, but theory and Braille methods of writing and transposition are also learned. Singing and reciting are also suitable subjects.

The supervision of the hours after study is very necessary unless the children are to idle round to while away tedious hours. Suitable games should be provided and exercises of a simple nature performed. If there is a suitable area, various walking, running and jumping games can be played, while indoors many parlour games are appreciated. Swedish gymnastics afford an appropriate form of exercise and demand little or no apparatus. Swiss seesaws, skipping and skating are beneficial. Hobbies are as valuable for the blind as for the sighted scholar. Unfortunately the games and exercises are more restrained in scope, but flower or herb gardening, the keeping of silkworms, poultry keeping, the making of the simpler toys and artificial flowers and similar recreative industries help to keep both the body from being unoccupied and the brain from being idle.

The training of the blind who have reached the age of fourteen or sixteen, should be such as to fit them for some industry in which they will be able to occupy their time and to earn a satisfactory remuneration. It must be pointed out that in the marketing of the products of their labour, the sightless worker is at a great disadvantage and it is generally necessary for assistance to be afforded to enable him to obtain a suitable monetary return for his labours.

The more usual avocations of the blind are wickerwork, mat making, wire-work, brush making, cobbling and joinery. Other occupations which may afford some scope are piano-tuning and massage. Piano and organ playing may also be followed professionally. In the case of blinded soldiers special employment may be found, such as the management of telephone switch-boards, telegraphy and limited office work. It is also possible that with suitable machinery and under adequate supervision the blind may be usefully employed in weaving, lens making and other industries. There is also some scope in the mastery of foreign languages and in this connexion I desire to point out that Esperanto, the most successful and, practically speaking, the only international language, is readily learned by the blind and may be of service for foreign correspondence. This language is

[1] Read at a Meeting of the Western Australian Branch of the British Medical Association on June 18, 1919.

simplicity itself and its grammar is at once so perfect and entirely free from irregularities or exceptions that it can be learned in a few lessons. It can, of course, be readily written in Braille.

It is desirable to mention here that there are several machines used by the blind. Touch type-writing on the ordinary type-writer is easily mastered and practised. There are also one or two forms of machine Braille writers, such as that devised by Stainsby & Wayne, of Birmingham, who have also produced a Braille shorthand writing machine. This machine enables a speed of 60 to 80 words a minute to be obtained. An improved machine of different design has been constructed by me to enable a more rapid speed to be attained.

The question of marriage is one which may be of some importance as affecting the welfare of the blind. As a rule the only people the blind can marry are similarly afflicted. It is frequently held that such marriages are undesirable, on the ground that the resultant offspring would not be properly cared for. If the results of my own practice are to be taken as a basis for recommendation, I have no hesitation in stating that I have seen no ill effects resulting from the marriage of a blind man and a blind woman. Where there is any definite stigma which is liable to descend to the offspring, or where there is gross ill-health of either male or female, one would naturally hesitate to recommend marriage. The statistics taken for some years from the Blind School, Maylands, may be taken as a rough general basis in showing that the majority of the sightless do not owe their blindness to inherited causes. More than two years' experience as Honorary Physician to the institution does not reveal a greater frequency of illness among either adults or children than among the normal residents of the district. Very few persons, it may be added, have been refused admission to the institution on the ground of physical or medical unfitness. In a series of twenty inmates, fourteen of whom were males, three were born blind. In no case was either parent blind. Injury caused five cases, including one of sympathetic ophthalmia; trachoma caused two, chronic conjunctivitis one, optic atrophy, possibly associated with hypermetropia, caused two. Six cases were congenital in origin. The remaining four were indefinite in origin, one being cataract, the second corneal opacity following operation, the third corneal opacity and the fourth leucoma with pannus. All these individuals are completely blind or almost so.

Origin of Reading for the Blind.

It is not definitely known how it came to be discovered that the blind could read by developing the sense of touch, but it is on record that individuals invented methods by which they could make notes for future reference. It is stated that one man cut notches in sticks and that after his death these were collected to be placed in a museum, but were unfortunately destroyed by fire. Others were known to have made books by knotting string together and passing it through their fingers in order to refresh their memory upon any subject. The first authentic record describes a plan of engraving the letters upon blocks of wood. This was the invention of one Francesco Lucas, a Spaniard, who dedicated it to Philip the second of Spain; this dates as far back as the sixteenth century. In 1575, Rampezzetto improved this system by engraving the letters upon a board the size of a page, thus doing away with the movable blocks. This system was dedicated to Cardinal Borromeo. These inventions, however, did not prove of any real value to those for whom they were intended, owing to the fact that the letters were sunk below the surface of the wood instead of being raised above it. In 1640, Pierre Moreau, a writing master in Paris, cast movable leaden type, but was unable to put his scheme to any practical use owing to the lack of funds. But his invention gave him a name in typographical history; as by his experiment he learned to make superior letters which he used to instruct his sighted pupils. Needles and pins were next employed, which were inserted into cushions, but as they were difficult to feel, this plan also came into disuse. About the same time a trial was made of large wooden letters similar to those used at the present day for printing posting bills. After these came the contrivance of Du Puireaux, who used wooden letters, but they were much smaller than any of those previously mentioned. He afterwards employed a pewterer to make them of metal; being, however, cast in sand, they were found to be too rough to be of any service. These letters were placed in a small frame with a handle, which resembled the hand apparatus used to hold types for marking linen. In 1783, the philanthropic society of Paris ordered some punches and matrices to be made for casting a new type much smaller. The expense of this was defrayed by M. Rouillede de L'Etang, the treasurer of the society. This system was also found to be of little use to the touch of the blind. New punches, still less in size, were cut and fresh type was cast. This was the same as that used in Paris in the early part of the eighteenth century. A type was then made consisting of large and small italics. In 1817, this was succeeded by the large and small Roman letters, although italics were still used for a few years later. While experiments were going on in France, attempts were also being made in Germany. Weissemburg, residing at Mannheim, who lost his sight when about seven years of age, made use of letters cut in cardboard, and afterwards pricked maps in the same material for the study of geography. By this method he taught Mdlle. Paradis, who afterwards went to live at Paris and made it known to Valentine Hauy, who was the first to emboss paper as a means of reading for the blind. This was about the year 1784. The circumstance which led him to give attention was as follows. In 1783, a band of blind musicians obtained their living by playing in the street. They wore spectacles and placed music books on stands before them as if they were possessed with sight. Amongst the company who stood to listen to their performance, was Hauy, and as he watched them pretending to read page after page of their book, it occurred to him that some plan of raised notes might be devised by which these men could feel the notes they played. He at once collected all information he could obtain respecting the various methods in vogue then and previously for

giving instruction to the blind. It does not appear that he succeeded in placing a system of music before his pupils, but the types prepared by the philanthropic society came to his knowledge and were afterwards used by him in the institution for the blind which he established at a later date. His first pupil was a young man born blind, named Lesieur, and he was obliged to pay him the amount which he would have obtained by begging in the street before he would undertake to receive instruction. As he went on teaching his pupil, fresh suggestions came to him by which he afterwards made several practical improvements. He was obliged, however, to apply for financial assistance from the philanthropic society. This was granted and he was able to extend his work further by giving instruction to an increased number of pupils. He obtained for them a house, No. 18, in the *Rue Notre Dame des Victoires*. This house is considered to be the cradle of all the schools of instruction throughout the world. In 1785, two years after he had stood and listened to the band above mention, he had 25 pupils all of whom were gratuitous and all made considerable progress. The novelty of the undertaking soon attracted public attention and support, so much so that on December 26, 1786, at the command of the King, he gave an exhibition of his pupils before the Royal family at Marseilles. This brought the matter generally before the public and the Government, and in 1791, the National Assembly passed a decree placing the institution in the charge of the State.

In 1821, the Lady Elizabeth Lowther brought from Paris some of the embossed books previously referred to. These were procured for her son, the late Sir Charles Lowther, Bart., of Swillington and Wilton Castle, Yorkshire. She also procured types by which he might emboss other books. Aided by a clever man servant, he embossed the Gospel of St. Matthew and other epistles and he is considered to be the first to read and print embossed books in England. His original printing press and types are still preserved at Swillington. In 1827, Mr. Gall, of Edinburgh, embossed some elementary works in an angular type (not now procurable). It was this gentleman who aroused the British public to a sense of the duty of providing reading for the blind and he justly deserves the honour due to him as the pioneer of book printing for the general use of the blind in that country. In 1837, Mr. Alston, of Glasgow, printed some books and in 1849 he completed the Bible in nineteen volumes. His type was, however, unreadable owing to the strokes and turns in the letters. Mr. Lucas, of Bristol, and Mr. Frere, of Blackheath, both of whom were shorthand writers, improved on Mr. Alston's plan by simplifying the letter and also shortening the words. These type were found to be useless for educational purposes, inasmuch as it was left to the reader practically to guess what was to follow by memorizing the context. In 1849, when Mr. W. Moon became blind, he found himself unable to make any practical use of the types then in existence. He accordingly set to work to simplify the Roman letter and where any difficulty presented itself, he dispensed with that letter and substituted one to take its place. When he had completed his alphabet, he found that it consisted of only nine characters and that he had completed and finished the work taken up by his predecessors. It was now made possible for every person from the child at the school-going age to the man of ninety years to read and so simple was his type that a pupil of ordinary intelligence could learn to read it slowly in a week. From that time to the present no improvement has been made on the system of using lines or strokes, and the only addition made to it since its invention have been a few minor points which have tended to improve his system. He had a profound belief in the Divine blessing and accordingly, in 1874, he commenced to emboss the Bible and other religious books. His work among the blind was rather of an evangelical character than of a literary one. It will be difficult to estimate the value of his work. In the thirty years which followed the invention of his alphabet, he had adapted his type and printed books in 124 languages and had circulated about 110,000 volumes. His type became so popular that it spread into most of the countries of Europe, into Egypt, Syria, India, China, Australia and America, etc.. It was in the latter place that he received the degree of LL.D., hence his title, Doctor Moon. He was aided in his work by his daughter, Miss Moon, who took a deep interest in it during his lifetime and after his decease she carried on the establishment he had built up. At her death the National Institute for the Blind, London, took over the premises, etc., and the work is now being carried on by that body.

The Braille System.

Louis Braille was born in 1809 at Caupvray, near Meaux, on the Marne. His parents were harness makers, and Louis, when only three years of age, lost his sight, the result of an accident while playing with his father's tools. In 1819, he entered the Paris Institution and in 1826 was elected a professor. Braille had been educated under the old system of using the type contrived by Valentine Hauy out of the Roman characters. It is not definitely known how the system which bears the name of Braille was originated, but somewhere about the year 1776, an artillery officer, named Barbier, had invented a system of type in raised dots. It consisted of six dots placed vertically on the paper; in theory this system was perfect, as it gave a sufficient number of possible combinations, but in practice it was useless, because the reading finger could not cover an entire letter. Braille reduced the vertical depth of the letter to three dots and he doubled the width so as to retain the six points. This gave the same number of signs and at the same time made it possible for the pupil to decipher at once the letter or sign under the reading finger. Whatever may be said of the preceding systems, this one stands alone; it revolutionized the training and education of the blind generally. It was less bulky and books printed in it could be turned out at about a third of the cost of any other type previously invented. After a life of usefulness Braille, having weak lungs, passed away in 1852 and in 1887 a monument was raised to his memory in his native *commune*. The system which he perfected, is now universally adopted throughout the world, and

all previous inventions have become obsolete. The two standard types now remaining being the one above mentioned and the Moon type, the latter being used only by those who become blind late in life or whose touch is impaired by hard work, etc.. It might have been possible to have made the Braille system universal, but the Americans, wishing to improve it, set about to produce confusion by modifying it into two systems, thus making the Braille into three divisions, all of which had to be learned if one would read literature which was produced in that country. These innovations were called American Braille and New York point. The first, from a scientific point of view, undoubtedly had some advantages over the original Braille. It was claimed that the letters most frequently used had the smallest combination of dots. This did not facilitate the reading, but for the purposes of writing a small amount of speed was gained. There were no exceptions to the rules as regards the contractions and this was indeed a great advantage. Of the latter nothing can be said regarding its advantages; the six dots were placed from left to right, making it almost impossible for the reading finger to cover a letter. Under the Moon system we had a universal type which could be read by all nations alike, but under the innovations made in the Braille we were deprived of that uniformity which should always exist in order that those wishing to do so, could avail themselves of the literature of any country.

The system of musical notation was introduced in Paris by Louis Braille in 1829. It became the established system in France, but no full printed explanation of the musical notation in any language appeared till 1871, when Dr. Armitage, wishing to introduce it into England, obtained full information of the method. Key printed in German in 1879. Finally, in 1888, an international musical commission consisting of representatives of France, Denmark, England and Germany, agreed to print it in exactly the same way in their respective countries. Thus we have a system of music which is uniform throughout the world. Recently a conference has been held to consider the advisability of making the reading system uniform, at which delegates from all parts of the world attended. An agreement has been arrived at and it is to be expected that in the near future the blind as well as the sighted will be able to read the literature of all nations without having to learn a special system in order to do so.

Appendix.

The Braille Shorthand Machine.

While touch typewriting has for a number of years been a subject successfully taught to the blind, it appears that shorthand for the same purpose has been somewhat neglected. Means have been devised for enabling the blind to take notes from dictation and it seems to me that existing instruments for the use of blind stenographers are not as efficient as they might be.

A brief sketch of the existing system is desirable and will be briefly given. The system of representing the alphabet by varying combinations of six dots perfected in 1834 by Louis Braille was probably the greatest advance ever made in the education of the blind. This method is simple and enables every letter of the alphabet, numbers, punctuations and mixed signs to be readily formed and read. There are a number of Braille writing appliances, including Braille typewriters. The machine existing for writing Braille shorthand is the one designed some years since by A. Wayne and H. Stainsby, of the Birmingham Blind Institution. The Stainsby-Wayne machine is apparently the last word in speed for the blind, but not much data regarding it is available at the Blind School. I am informed, however, that four months ago the Melbourne Blind Institution made inquiries from the local school concerning the directions for the use of the machine, as they were beginning to use it. The only information available here were the directions for its use (in Braille). This machine is a revised one and I am informed by a pupil here that he has reached a speed of 60 words a minute. However, he is not expert owing to want of practice. I presume the maximum speed available with this instrument would be 100, or possibly 120 words a minute, but I am unable to ascertain definitely what speed has been done. Definite contractions and phrases are, of course, used in this system. A brief description of the machine will include this introduction. The machine has six keys and a spacer. The six keys enable any Braille letter combination to be formed and one or more may be struck at one time. The record is made on a long strip of paper fed from a wheel on the right of the machine, the paper winding loosely off at the left. When rewound, it is readily read in the usual way. Only one letter can be recorded at one stroke, though a phrase may, of course, be readily formed from one or more letters. The machine is relatively inefficient,

(*a*) As letters only are formed at a time,

(*b*) Six keys only, instead of ten (or more), are employed.

The keys (3 left and 3 right) are worked with the right and left hand. Speed is attained by the use of letters for suffixes and affixes and for phrases. To obtain the maximum efficiency it is necessary to use all the fingers, a gain of 10% efficiency, and for further efficiency it is desirable to produce several letters instead of one letter with one effort. I am unable to ascertain the speed limit with the instrument referred to, but believe it to be 80 to 100 words per minute, with a possible outside limit in the case of an expert of 120 words a minute. By obtaining increased efficiency with the ten keyed instrument, a speed of 150 to 200 words a minute should be obtainable.

Fortunately a suitable instrument as a basis for modification is to be found in the stenotype, a machine introduced several years ago, which attains a high pitch of efficiency. This machine embraces a number of keys, all the fingers being employed and enables speed of 150 to 200 words per minute to be attained, the former speed being attained without expertness. A suitable modification working with an embossed apparatus, enables the blind to attain a similar speed. The system embodies, as most shorthand systems do, abbreviations, contractions for suffixes, etc., and phraseology. The keys are struck by

a touch system and facility follows practice. The result is legible and lasting. The instrument is small and portable.

Certain modifications of the system employed by stenotypists require modification to enable Braille methods to be applied and to allow of the simplicity, rapidity, facility, accuracy and legibility of the prototype. A modified machine of this type is much more efficient than the existing shorthand machines for the blind, as a whole word, instead of a letter, is written with one stroke. Regarding the modifications necessary, the following points must be borne in mind:—

(*a*) That an embossing device printing Braille letters requires to be substituted for the letter of the ordinary form of machine.

(*b*) It is essential to print standard size Braille, otherwise it will be difficult to read.

(*c*) It is immaterial what Braille letters are used. It is desirable, therefore, to retain the standard stenotype letters, as well as phrases.

(*d*) Thick paper has to be used for the Braille record and abbreviations of the ordinary system.

(*e*) It is not essential to have Braille signs embossed on the learner's machine, as they are taught by the "touch" methods and are learned actually by the position of the keys. It may be desirable in institutions and schools to have a Braille-embossed set of keys, or rubber caps with Braille embossed on them to fit on the keys of the ordinary Braille-stenotype machine.

The finished model, in which a few alterations seem to be necessary, enables the purpose of the machine to be realized.

Reports of Cases.

AN ENTERO-CYSTOMA WITH TWISTED PEDICLE.[1]

By **J. A. G. Hamilton, B.A., M.B.,**
Honorary Gynæcologist, Adelaide Hospital.

Mrs. S., *æt.* 40, 6-para, was admitted to the Adelaide Hospital on November 23, 1918. Three days before admission she was suddenly seized with severe abdominal pain and vomiting. There had been no action of the bowels since the onset of the attack. The pulse-rate was 120. The abdomen was distended. There was a small umbilical hernia. The lower part of the abdomen was occupied by a cystic tumour, extending to the level of the umbilicus. It was thought to be an ovarian cystoma with a twisted pedicle.

The abdomen was opened and a large cyst, blackish in colour and somewhat necrotic, presented. The pedicle was thin and cord-like. It was attached to the ilium. The ovaries on both sides were normal. The bowel was soft and semi-gangrenous and tore away. An attempt was made to sew up the opening, but the sutures would not hold. The patient's condition was too bad to allow of an anastomosis being done. A Paul's tube was therefore placed in the open end of the bowel. There were signs of a general peritonitis. She died on the following day.

This is a very rare condition. I have never met with a similar case in an experience of some thousands of abdominal sections. It is mentioned in only one or two of the works of reference I have been able to consult. Adams and Nicolls, in their work on "Pathology," describe it and call it an entero-cystoma. It is really a form of Meckel's diverticulum. The diverticulum represents the remains of the omphalo-mesenteric duct. All degrees of patency of the duct may exist. It may remain open for its whole length, giving rise to what is known as omphalo-mesenteric fistula. It may be open at one end—omphalo fistula; it may be closed at both, forming a cyst. When situated in front of the peritoneum, it forms a pre-peritoneal cyst; when attached to the intestine, it is called an entero-cystoma. These cysts are generally small, but this one was as large as an adult head.

[1] Read at a Meeting of the South Australian Branch of the British Medical Association on May 29, 1919.

A CASE OF STENOSIS OF THE AORTA.

By **G. R. West, M.B., B.S.,**
Medical Superintendent, Adelaide Hospital.

G.K., aged 50 years, married, a labourer, was admitted to the Adelaide Hospital on March 26, 1919, complaining of cough and pyrexia of ten weeks' duration. The illness followed a trap accident, with injury to the back; the following day the patient expectorated blood and was told by his doctor that he had pneumonia. This is confirmed by his medical attendant. He never recovered from this attack. The cough, pyrexia and dyspnœa continued. He lost 5.6 kilos in weight. He had no pain and no night sweats. There was no history of serious previous illness, nor of venereal disease. He had four children, all healthy.

On examination the patient was found to be pale; his temperature was 38° C. (100° F.) and respiration 36 per minute. The radial arteries were slightly thickened; the pulse was regular, 104, tension slightly increased. The apex beat was in the mid-clavicular line, fifth interspace. A systolic murmur was heard at the apex and a soft systolic murmur at the base, most marked at the first right interspace. It was also heard in the first left interspace. The right side of the chest was larger than the left and moved less with respiration. There were dulness, absence of breath sounds and diminution of vocal resonance and fremitus from the fourth rib downwards in the right nipple line and from the spine of the scapula downwards on the right posteriorly. At the level of the spine of the scapula on the right tubular breathing was heard. On palpation dilated varicose vessels were felt pulsating under the skin in the region of the vertebral borders of both scapulæ. A systolic murmur, which seemed superficial, was heard over these. Similar dilated pulsating vessels were felt below the costal margins, corresponding to the anastomosis between the internal mammary and deep epigastric arteries. The carotid arteries were felt to beat too forcibly. No pulsation was felt in the jugular veins. The pulsation of the femoral arteries was not unduly forcible.

While the patient was evidently suffering from empyema, the dilated vessels were held to point to some obstruction between the origin of the subclavian vessels and the abdominal aorta.

X-ray examination showed the presence of fluid in the right side of the chest, but no evidence of aneurysm nor tumour.

The patient collapsed suddenly and died on April 3, 1919.

Autopsy revealed a large empyema on the right side; the right lung was compressed; there were old pleural adhesions on the left; the left lung was œdematous. There was a constriction of the aorta at the site of attachment of the *ligamentum arteriosum*. The constriction was abrupt, of the hour-glass type; it was opposite the lower border of the *ligamentum arteriosum*, which was thus attached to the lowest part of the upper portion of the aorta. The constricted portion was from one to two millimetres in diameter. The aorta was of about normal size from its origin to the origin of the left subclavian artery, about half its normal diameter between this point and the constriction and of about normal size below the constriction.

The *ligamentum arteriosum* was thick and cord-like and about 2.5 cm. in length. The innominate and both subclavian arteries were dilated, the subclavians being about twice the diameter of the carotids. The internal mammary arteries and costo-cervical trunks of both sides were about the diameter of the normal subclavian arteries, but the walls were thinner. Beyond the origin of these vessels the subclavian arteries and their branches were of normal diameter. The upper three pairs of intercostal arteries arising from the aorta beyond the constriction were much enlarged, particularly the upper pair. The external iliac arteries were much larger than the internal, and the deep epigastric arteries were enlarged. The femoral arteries were of normal size. The heart showed a "milk spot" on its anterior sur-

face, but otherwise it was normal. There was no abnormality of the valves nor septa. The pulmonary artery and its branches were normal.

This condition seems sufficiently rare to merit recording, though it has been previously described by a number of observers. Dr. Maude E. Abbott, in Osler and McRae's "System of Medicine" has collected 198 cases which include the two types previously described by Bonnet, *viz.*, the infantile (69 cases) and the adult (129 cases). In Bonnet's infantile type the constriction is usually between the left subclavian and the *ductus arteriosus*, being an exaggeration of the normal "isthmus" in this situation. The *ductus* usually remains patent, most of the blood for the trunk and lower limbs thus reaching the aorta through it from the pulmonary artery. There is for this reason usually very little attempt at a collateral circulation in this type. The infantile type, unlike the adult, is frequently associated with other grave congenital defects.

The present case is, however, an example of Bonnet's adult type, in which the constriction is at the site of the *ductus arteriosus* or slightly below it. The mode of origin of this type is uncertain. It has been ascribed to kinking of the aorta by contraction after birth of a long *ductus arteriosus*, or, again, to an extension of the peculiar tissue of the *ductus* into the aortic wall, near its attachment, which would therefore share in the fibrosis which the *ductus* undergoes after birth. It is at any rate probable that in the adult type the condition arises after birth, so that the gradual increase of pressure in the aorta above the constriction leads to progressive dilatation of the arteries forming the collateral circulation, which, as is seen in the present case, may be so efficient that there are no symptoms and life is not shortened. In the majority of cases symptoms have appeared somewhat late in life; in some cases symptoms have been present throughout life. The symptoms which have been described as due to the lesion, include headache, vertigo, buzzing in the ears, lividity or suffusion of the head and neck, thoracic or abdominal pains; cardiac insufficiency frequently supervenes and produces symptoms. The physical signs usually described are similar to those of the present case, being chiefly those due to the collateral circulation and, what is given prominence to by many observers, greatly increased pulsation in the neck and upper limbs, but not in the lower limbs. Death has in many of these cases occurred suddenly, a rupture of the heart or aorta being found in several cases. In a large proportion death follows a stage of broken compensation. In a certain number, of which this case is an example, the condition does not interfere with the duration of life, death occurring from an intercurrent complaint.

My thanks are due to Sir Joseph Verco for permission to publish the notes of this case.

Reviews.

LONGEVITY.

The fifth edition of the treatise[1] on the prolongation of life by the late Sir Hermann Weber has been passed through the press by his son, Dr. Parkes Weber. The book was already set in type at the time of the author's death at the ripe age of ninety-five years, after more than sixty years' practice in the precepts that he found so useful in lengthening the lives of others. A preface has been supplied to this edition by Sir Clifford Allbutt, who takes the opportunity to bear witness to the efficacy of the counsels of his friend.

The subject of the prolongation of life is a large one, especially if it be treated in respect to the whole population from infancy upward. The lessening of the death-rate in the first year of life, the prevention of tuberculosis and the enforcement of vaccination against small-pox, will increase the average duration of life. The author does not, however, concern himself with these problems, but deals with the arrangement of the manner of living in adult life, so that life may be prolonged.

[1] On Longevity and Means for the Prolongation of Life, Founded on a Lecture delivered before the Royal College of Physicians on December 3, 1903, by Sir Hermann Weber, M.D., F.R.C.P.; Edited by F. Parkes Weber, M.D., F.R.C.P., with a Preface by Sir Clifford Allbutt, K.C.B., F.R.S.; Fifth Edition, revised and partly rewritten; 1919. London: Macmillan & Co., Limited; Demy 8vo., pp. 292. Price, 12s. net.

Investigation in this restricted field appears to be invited by the facts observed by the Registrar-General of the United Kingdom. He finds that the average duration of life has increased during the last fifty years from a little over 40 years to about 48 years; but that the mortality among persons between 60 and 65 years has scarcely decreased during the last forty years, while the death-rate among those over 70 years old has even increased in the same period.

A study made by the author of the records of over 150 very long-lived persons has shown him that the majority were temperate, ate little meat, lived in the open air, spent a busy life full of work, rose early in the morning and exhibited a cheerful disposition. Few of these aged persons had been self-indulgent, intemperate, idle or lazy. By appreciating the individual constitution, the tendencies to disease revealed by the family history, the habits of the body and the occupation, attention may be directed to the factors which will limit life and means may be adopted to strengthen the weak points of defence. Above all things, the physician must bear in mind that work, moderation in food and plenty of air are the most potent factors in improving and maintaining health. By means of convincing records the author shows how the adoption of healthy rules of life has prolonged the days of those threatened with death in middle life by their inherited constitution.

The principal portion of this book is occupied by discourse upon the various factors which play their part in lengthening life. Walking is considered the most natural, most easily obtainable and most economical form of exercise. While exercise is of supreme value in providing a healthy body, it ought not to be extended to the feeling of distress. Great benefit is derived from regular daily exercise, but this should be supplemented by a day of more prolonged exercise, lasting from three to six hours, once a week. The rule is laid down that great moderation in the amount of nourishing foods as meat, cheese and pulses should be observed by elderly persons. The author argues that excessive consumption of food leads in the course of time to starvation of the tissues. In selecting the diet, he urges contemplation of the opinion of Bacon, who writes that: "It is a safer conclusion to say: 'this agreeth not well with me, therefore I will not continue it,' than this: 'I find no offence of this, therefore I may use it'; for strength of nature in youth passeth over many excesses which are owing a man till his age." The promotion of good humour and cheerfulness benefits not only the patient but all around, for the mind plays no small share in extending the duration of life.

The author is strongly of opinion that too much sleep is harmful. He believes that six hours are sufficient for most adults, though some may need more. He recognizes that children need much more sleep than adults and women more than men. He holds that habits make or mar a man's life. He urges the cultivation of habits of work, obedience, self-control and helpfulness and the suppression of those of carelessness, extravagance, procrastination and dissipation by constantly inhibiting the tendencies towards these vices.

The mellow wisdom of these well written pages will give pleasure to every reader. The ripe experience which supports the advice of the physician, adds what will be helpful to all who have to counsel others in the care of their health. Few books can be recommended with greater confidence.

Dr. Eric Sinclair, Inspector-General of Mental Hospitals, has been appointed a Member of the Board of Control and of the Business Committee of the United Dental Hospital of Sydney, in place of the late Dr. C. S. Willis.

We regret to announce the death of Dr. Richard Charles Irvine, of Launceston, and of Dr. Arthur Ebenezer Barrington, of Benalla, Victoria.

Major W. A. Sawyer, whose appointment to the position of Director of the Hookworm Campaign in Queensland, in succession to Dr. J. H. Waite, was announced in our issue of July 5, 1919, arrived in Australia on August 28, 1919. The campaign will, it is understood, be conducted on the plan evolved by Dr. Waite and the collaboration of the International Health Board will be continued for a period of five years.

The Medical Journal of Australia.

SATURDAY, SEPTEMBER 6, 1919.

Influenza Statistics.

The epidemic of influenza is apparently entering upon its final stage, at all events for the present. The long-continued immunity enjoyed by Tasmania has ended and the island State has now to pass through a period of anxious expectation until the extent and virulence of the outbreak can be measured. Up to the present time the disease does not appear to be attended by a high mortality. It is therefore not unreasonable to hope that the virulence exhibited on the mainland may not be reached. Tasmania has a population of approaching 200,000 inhabitants. During the first six months of 1919, the death-rate from influenza, according to the official figures in New South Wales, was 1,612 and in Victoria 1,795 per million of population. Should the Tasmanian epidemic follow a similarly moderate course, the number of deaths in Tasmania during the next six months should not exceed 300. It must be remembered that the death-rate in South Africa was reported to have been 22,800 and in New Zealand 4,707 per million of population.

In four issues we have published a detailed summary of the report on influenza and maritime quarantine compiled by Dr. J. H. L. Cumpston, the Director of Quarantine, Dr. W. J. Penfold, the Director of the Commonwealth Serum Laboratories, and Mr. T. M. Cherry, a mathematician engaged to analyse the figures supplied to him by the Department. The subject matter of this report may be divided into four chapters. There are the type of disease that has been knocking at our doors, the measures taken to prevent it from entering, the relation of the disease that has been epidemic in Australia in 1919 to the disease that has affected the remainder of the world and to the disease that was prevalent in Australia in the winter of 1918 and, lastly, the prophylactic value of inoculation with so-called influenza vaccine.

In the chapter provided by Dr. Penfold on vaccines, he devotes a section on the value of the Commonwealth vaccine as a preventive measure. He deals with 11,402 employees of the Victorian Railway authorities. The records are limited to a period of exactly six weeks, from January 24, 1919, to March 7, 1919. Reference to earlier portions in the report reveals the fact that the epidemic in Victoria started early in January. The first cases were reported in Melbourne on January 9, while by the 20th of that month it was determined that there had been between 50 and 100 cases. Although it is not specifically stated, it is implied that the first inoculations were carried out on January 24, 1919. The total number of persons inoculated was 5,155. In order to explain the surprising finding that, while 2.1% of the twice inoculated and 4% of the not inoculated were attacked, the proportion of those who had been inoculated once and yet had fallen victims to the disease was 8.2%, he has recourse to a readjustment of the figures. Every individual inoculated was subjected to the same risk of infection until the second injection had been given. As this took place after one week, Dr. Penfold deducts from the number of those inoculated twice one-sixth and adds this number to that of the once inoculated. A calculation made on the revised figures yields approximately the same susceptibility to the disease in the not inoculated and in the once inoculated. Dr. Penfold neglects to take into consideration the fact that, during an indefinite period, probably extending over two weeks, the whole population under analysis was unprotected by vaccination. Presumably all escaped infection. If it is necessary to revise the figures, the revision should at least be thorough. As there may be some objection to the assumption that all the men were exposed to infection from January 10, 1919, it may be advisable to illustrate the effect of this revision on the assumption that the period was but one week. There were 11,402 uninoculated individuals exposed to infection for one week and 6,247 exposed for six weeks. This would be equivalent to 8,147 individuals exposed for six weeks. The attack rate would be approximately 3% as compared with 2.5% for the twice inoculated and 4.1% for the once inoculated. A moment's thought, however, will demonstrate that no deductions can be drawn from these

figures at all. It is quite uncertain how many of these people were actually exposed to infection. The length of exposure certainly varied very widely, and the same must be admitted concerning the ordinary care of the hands and faces of the individuals. In the next place, it is inadmissible to calculate with great variations in the size of the classes. To accept three classes which stand in proportion to one another as 16:7:3 is to court error. The much quoted instance of the *Encounter*, in which the inoculation is said to have been more than usually thorough and in which 41% of the entire ship's company was infected, would rather suggest that the degree of protection, if present, must be very small. We would prefer to leave the matter as unproven.

In regard to the inquiry into the power of vaccine to modify the severity of the attack, Mr. Cherry finds it necessary to adopt a method to which exception must be taken. He divides the individuals treated in the various hospitals in Melbourne into classes according to whether they had been inoculated or not, and sub-divides the inoculated into two groups, the once and the twice inoculated. But he has a large group of 681 persons concerning whom he has no information. The mortality in this group is extraordinarily high. He considers it justifiable to distribute the figures from this group proportionately among the not inoculated and the inoculated groups. Why should it be assumed that the distribution of inoculated and not inoculated in this group corresponds to that of the remainder of his material? The fact of a very high death-rate indicates that he has unconsciously been dealing with a peculiarly severe type of disease. How many of the persons affected with this type were previously inoculated is unknown and any assumption is mere speculation. Nor is it permissible to ignore a class which represents over one-sixth of the total number. The unfortunate appearance of this class vitiates the whole of the elaborate calculation. A similar defect exists in connexion with the calculations made concerning the death rates among the patients on board quarantined ships or in the quarantine stations. The first outbreak on board the *Medic*, embracing 179 cases and 7 deaths, occurred among a company classified as "indefinite." An impression is gained from the remaining records that inoculation may have modified the type of disease, but it is apparent from the records that there were wide variations in the severity of the disease among the several inoculated communities and among the several not inoculated communities. The statistics are valuable in many respects, but it must be admitted that they fail to prove a definite prophylactic effect of vaccines or even the power of inoculation to modify the severity of the disease.

LOSS OF SLEEP.

The subject of fatigue has been freely investigated from the point of view of muscular action. Less attention has been paid to the effect of prolonged activity on the mental state. Observations carried out in schools have led to the recognition of a deteriorating effect of fatigue induced by overwork in the young on the power of concentration, of application and of assimilation. It has further been established that the resistance to fatigue varies widely in children, while history supplies many striking instances of persons capable of working at high pressure, with but short intervals of sleep and rest, and maintaining this great output of energy for many years. General observations of this kind are numerous, but the literature on the subject of fatigue and exhaustion contains few records of accurately measured effects of overwork or of prolonged waking. The mind, like the muscle, cannot be exercised continuously without some manifestation of loss of efficiency. It is, however, easier to measure the tiring of a muscle than the tiring of the mind. Miss May Smith, working in the Psychological Laboratory at the University of Oxford, has attempted to register the mental effects of mental occupation continued during the hours usually devoted to sleep and to record these effects graphically.[1] Her observations are of undoubted value, although their interpretation may be difficult. She tested her own mental activity after a reduction of sleep from an habitual eight hours to ten and a half hours spread over three nights. On the first night she remained awake until 6 o'clock in the morning and slept for only one and a half hours; on the second night she slept from 4 o'clock until 7.30, and on the third from 2 o'clock until 7.30. During the hours of waking a carefully planned time table was followed in order to insure that she was not only awake, but actually exercising her mental faculties. The tests employed were objective and were applied by a co-worker at the same time of the day during and after each experiment. They consisted in marking the red circles on the tape of McDougall's "dotting" machine as they passed behind the opening or window at the rate of 5.8 second each. The total number of irregularly placed circles on the tape measuring 6 metres is 1,200. A standard method of registering errors was set up and followed. The second test was a memory

[1] *School Hygiene*, June, 1919.

test. A list of forty words was read at a uniform rate of one word in each two seconds. The words were so arranged that there was an obvious relationship between each word and the one succeeding it, so that by an act of attention the sequence could be remembered. For example, the following words were used: mountain, plain, ugly, beauty, Venus, Greece, oil, smooth, rough, rude, cultivated, refined, sugar, sweet, salt, sea, sky and so forth. Failure to repeat the correct word within 10 seconds was calculated as one error. A considerable amount of preliminary training was indulged in, for the purpose of eliminating the possibility of the results becoming vitiated by skill being acquired by practice. It was found that the number of errors remained well within the range of normal variation on the day following the reduction of sleep to 1½ hours. On the following day, after 3½ hours' sleep, the number of errors was distinctly reduced and reached a level not previously attained. This improved mental output was maintained at times for a further day or two, but then the reaction set in and the number of errors made on subsequent days rose very considerably. The return to normal proved to be irregular and was often delayed for long periods. Miss Smith likens the first phase of enhanced mental activity to the immediate effect of alcohol or other stimulant drug. The reaction stage is characterized by a general decrease of efficiency, shown by loss of accuracy, weakening of the power of inhibition and loss of power of concentration and of retention. Apparently the first stage is governed by an increased effort to counteract the subjective sensation of fatigue. In it sources of energy not usually employed, are released. While the work performed under these conditions may be of value, the process is obviously wasteful, since the reaction of diminished efficiency is disproportionately great. Further study along these lines may lead to the introduction of tests of practical value for estimating the effect of overwork in children. It would be necessary to set up tests extended over prolonged periods and the increase in the daily periods of mental activity would have to be but slight. Miss Smith refers to the possibility of an immunity to a particular form of fatigue, due to an antitoxin. This suggestion seems to be highly speculative.

THE RECOGNITION OF PENTOSURIA.

The importance of the differential diagnosis of diabetes and other metabolic disturbances characterized by the appearance in the urine of substances capable of reducing copper salts need not be emphasized. There is no actual difficulty in distinguishing glucose from the other sugars by the ordinary chemical tests. In practice a confusion only occurs when the practitioner tests urine with Fehling's solution and is satisfied that the reduction of the salt to copper oxide necessarily indicates the presence of glucose. This error should not be made and its occurrence is not an indication of the need for simple methods of detecting pentose, maltose, saccharose or lactose. A. Castellani and F. E. Taylor, however, appear to hold the opinion that mistakes would be less frequent if a new method were introduced into practice.[1] In 1917 the former pointed out that the sugar reactions of bacteria and monilias could be used to distinguish the sugars found in urine. The tests necessary for the differentiation are described as follows. When a patient is passing urine containing a substance capable of reducing Fehling's solution, a sample is collected in three sterile vessels. The urine in the second vessel is distributed immediately among sterile test tubes containing peptone water and a fermentation tube. Of these tubes one is kept as a control. Others are inoculated with *Monilia balcanica, M. krusei, M. metalondinensis, Bacillus coli, B. paratyphosus, B., M. pinoyi,* etc.. The tubes are then incubated and the production of acid and gas is noted. Glucose produces gas out of *Monilia balcanica,* maltose produces gas out of *M. pinoyi,* but not out of *M. krusei or M. parachalmersi,* lactose produces gas out of *Bacillus coli* Escherich, but not out of *B. paratyphosus B.,* while pentose produces gas out of *Bacillus coli* and *Bacillus paratyphosus B.,* but not out of *M. pinoyi* or *M. parachalmersi.* Similarly saccharose and inosite, substances that do not reduce copper salts, can be differentiated in this manner. The application of the sugar reactions of bacteria and monilias to this purpose is interesting and ingenious. It is, however, not likely to enjoy wide popularity, since it necessitates a laboratory with cultures of the organisms, which must be tested from time to time to insure that the artificial characteristics have not undergone modification in the course of continued subculture. The general practitioner will rarely have time or opportunity to perform the tests. On the other hand the chemical recognition of pentose by one of the orcein reactions can be carried out rapidly without elaborate laboratory equipment.

[1] *The Journal of Tropical Medicine and Hygiene,* July 1, 1919.

PNEUMONIC INFLUENZA.

In the *New South Wales Government Gazette* of August 27, 1919, a proclamation is published, removing the restrictions applied on all persons in the Tweed Shire and in that portion of Weston which is situated in Tarro Shire, for the purpose of preventing the spread of influenza.

In the *Queensland Government Gazette* of August 25 and August 26, 1919, orders are published prescribing the usual restrictions aiming at the prevention of the spread of influenza within the Shires of Herberton and Walsh and the townships of Silverspur, Texas and Yelarbon.

THE MEDICAL BENEVOLENT FUND OF NEW SOUTH WALES.

We have been asked to acknowledge the receipt of the following subscriptions to the Medical Benevolent Fund of New South Wales:—

	£	s.	d.
Dr. Cyril Shepherd	1	1	0
Mr. Edward T. Thring	1	1	0
Dr. Herbert E. Lee	0	10	6
Dr. R. L. Faithfull	1	1	0

The Medical Journal of Australia has advocated the policy involved in the following sentence: "Other things being equal, preference should be given to returned men." A natural corollary would be that medical practitioners, when engaging the services of secretaries, attendants or other assistants, should endeavour to employ men who have served their country or the dependants of those who have fallen. *The Medical Journal of Australia* is prepared to assist practitioners who are seeking assistants.

Abstracts from Current Medical Literature.

SURGERY.

(80) War Amputations.

Philip D. Wilson (*Surg., Gynec. and Obstet., May*, 1919) points out in a discussion on war amputations that for years the dominating idea was to obtain a stump able to bear weight on its end. This, fortunately, is not at all necessary, for it demands absence of terminal scars, a mobile, non-adherent flap and a good covering for the end of the bone, to obtain which aseptic healing is essential. A stump is, above all things, a lever, and its most important asset is its length; maximum length is preferable to end bearing power. Examination of 300 French soldiers six months or more after healing of the amputation wounds showed 70% with terminal scars, 50% of which were adherent to the bone, and the bone was protruding under the skin in 20%. The majority of these men, although wearing artificial limbs of a poor type, walked well. The aperiosteal method of dealing with the end of the bone gives greatest freedom from osteophyte formation. The nerves should be divided high up by a wedge-shaped incision and the end of the sheath ligated. The application of Carrel-Dakin by the La Panne method of stitching the tubes to square pieces of gauze is recommended. The application of extension to the skin, either by a pulley and weight or by a modified Thomas's splint has proved of great value. A weight of 1.3 to 2.75 kilos may be used. Contractions of particular muscle groups should be guarded against by systematically each day putting the stump through its full range of movement. Immediately a stump is able to bear pressure, steps should be taken to inaugurate end-pressure exercises, first, by pressing against a box protected by a pillow at the end of the bed, and, later, in a standing position against the seat of a chair. These exercises should be avoided where there are sinuses. Massage is valuable in keeping up the nutrition of the muscles and a light temporary prosthetic apparatus secured at the earliest date.

(81) Tumours of the Medulla.

De Martel (*Bull. et Mém. de Soc. de Chir.*, March 19, 1919) gives his technique in the operative treatment of medullary tumours. He has operated on twenty patients, of whom eleven were cured and nine died. The necessity for intimate collaboration with an expert neurologist is emphasized. Local anæsthesia being in this position difficult to obtain, he uses ether for preference. The prone position is recommended, with the shoulders and pelvis supported, so that the thorax is not pressed against the table. A blood pressure instrument is applied to one leg and a reading taken before the anæsthetic is given The pressure is usually augmented at first by the anæsthetic. On the precise localization of the tumour and the careful determination of the corresponding spinous process depends the possibility of making a limited laminectomy, and the extent of the laminectomy is in direct relation to the gravity of the operation. As soon as the vertebral canal is opened, catheterization of the canal is practised by means of a *dura mater* separator. The *dura* is opened only after evacuation of the cerebro-spinal fluid by simple puncture. The use of the Trendelenburg position to avoid interstitial hæmorrhage, which in the region of the bulb is so fatal and which follows sudden loss of fluid, is, de Martel believes, based on a false conception. The intra-medullary and the anterior types of tumour are likely to be overlooked by the inexperienced operator. The position of the incision in the medulla in intra-medullary tumours need not cause anxiety, since such a medulla is already deformed. On touching the medulla, the blood pressure rapidly falls and may become inappreciable, while the rectal temperature mounts to 40° or even 41° C.. In a fatal case at this stage there was found *post mortem* great hyperæmia of the stomach and intestines. A whip stitch of fine gut closes the *dura* accurately and the muscle is carefully approximated with interrupted sutures. The formation of a fistula is a great misfortune. The after-treatment demands special care of the shock, which is profound.

(82) Gangrene of the Lung.

The details of two cases of gangrene of the lung are given by Percy Cooper (*Clin. Journ.*, April, 1919). The first case was that of a child, *æt.* 4, who had been weakened by previous gastro-enteric catarrh. Later she contracted a severe form of measles, with broncho-pneumonia. The odour of the breath became intolerable and gangrene was diagnosed. Post-mortem examination confirmed the diagnosis. The second case was that of a soldier who had numerous wounds of a superficial character. Later, tetanus developed and following this a broncho-pneumonia, which ended in gangrene and death. The vile odour of putrefying lung which is pathognomonic of these cases, is emphasized. No faith is attached to antiseptic inhalation or injections, but surgical intervention in suitable cases is held to be justifiable.

(83) Gunshot Wounds of the Pancreas.

Ten successful cases of operation for gunshot wounds of the pancreas are recorded by Gordon Taylor (*Clin. Journ.*, April, 1919). He comments on the fact that this very fatal injury has been either less frequent or less often recognized than injury to other abdominal viscera. In Cuthbert Wallace's series of 965 operated cases of abdominal injury the pancreas is noted as being wounded in only five. Only one of the patients was successfully evacuated. The great risk of a severe and possibly fatal hæmorrhage interferes with the chances of these patients reaching a casualty clearing station. Pseudo-cysts occasionally follow gunshot wound of the pancreas, in the same way that they follow contusions of the abdomen. Two of the ten cases were operated on by the writer himself, the remainder by different surgeons.

(84) Post-Operative Hæmatemesis from Digestion of the Œsophagus.

Post-mortem digestion of the œsophagus is common, and although digestion of the œsophagus during life is by text-books considered to be very rare, Pringle and Teacher (*Brit. Journ. of Surgery*, April, 1919) maintain that it may be a cause of the hæmatemesis following operation or severe toxæmia. Interest was first aroused in the subject following a post-mortem done on a strong-looking young man dead from a gangrenous appendicitis. There was marked destruction of the lower end of the œsophagus, with slate-coloured fluid in the pleural sacs and hæmorrhage in the lungs. No inflammatory reaction was discovered which would have proved the *intra vitam* nature of the changes, but the hæmorrhage and the presence of air bells on the surface of the lungs were suggestive. The records of fifteen cases examined post-mortem are given. It is held to be probable that digestion of the œsophagus occurred in these cases during life. In eleven there was vomiting of brown or black material or actual hæmatemesis. Nine were post-operative and six were examples of severe toxæmia.

(85) Mesenteric Lesions in Strangulated Hernia.

A case of rupture of the mesenteric insertion in a strangulated hernia is reported by Fiolle (*Bull. et Mém. de Soc. de Chir.*, May 20, 1919). This is the eighth reported case in French literature. The patient, aged 62, had a small femoral hernia. No taxis had been employed in attempting reduction. At the operation the sac contained no blood and the intestinal loop, though black, seemed living, except at one point, where a slough was commencing to form. The mesentery was found separated for 8 cm. at a distance of 2 to 3 cm. from the bowel. The mesenteric vessels were thrombosed. A free resection was made and an end-to-end anastomosis, but the patient died on the next day, with symptoms of stercoræmia. The rupture must have been preceded by the thrombosis, since there was no hæmorrhage in the sac. The importance of a careful examination of the mesenteric border must not be forgotten.

(86) Incidence of Tetanus in War.

In discussing the incidence of tetanus, Hare (*Ambulance de l'Océan*, July, 1918) states that, of the French wounded in the early days of the war, six out of 800 developed tetanus, while the British figures were 16‰. At one stage, in October, 1914, the figures reached the high rate of 32‰. He points out the possible latency of tetanus spores, whose activities may be developed by some traumatism. The

possibility of delayed tetanus being due to hospital infection is commented on, and in this regard certain hospitals had a constant high rate. Cultures were taken by him from pieces of shell removed at operation, and in seven cases bacilli, morphologicaly resembling tetanus, were discovered, but in only one case was the inoculation of white mice followed by the development of this disease. In 52 cases anaerobes of various kinds disclosed themselves, without any clinical evidence of serious infection in the patients.

GYNÆCOLOGY AND OBSTETRICS.

(87) Tuberculosis of the Cervix.

G. A. Moore (*Surg., Gynec. and Obstet.*, July, 1919) finds that, while too much has been written concerning tuberculosis of other parts of the female genital tract, comparatively little study has been given to tubercular lesions of the cervix. According to Williams, the cervix is found to be involved with tubercular infection less frequently than any organ in the female genital apparatus, with the exception of the vulva. The stratified pavement epithelium of the vaginal portion of the cervix offers a strong barrier to infection, and the tenacious secretion of the cervical canal is strongly germicidal. Primary tuberculosis of the cervix is very rare. Not more than 15 or 20 cases have been recorded. About 150 cases of secondary tubercular infections of the cervix have been reported, but this probably represents only a small percentage of all cases, as many are diagnosed as cancer, syphilis, etc.. The most common route of infection is from the blood stream, and the next by direct extension from a tubercular process in the ovaries, tubes or uterus. It is regarded as possible that the infection may be conveyed by means of tubercle bacilli in the semen, although this occurrence has not been proved. It is stated that the infection usually arises from the male with tuberculosis of the lungs using his saliva as a lubricant. There are four common varieties of lesions: (*i.*) The miliary form. Tubercles are seen on the cervix; this condition is often associated with miliary tuberculosis. (*ii.*) The interstitial form. This is difficult to diagnose clinically, as the process starts in the deeper tissues. Later ulceration may occur and malignant degeneration may ensue. (*iii.*) The vegetating form. In the early stages there is hyperplasia of the mucosa. This developes into a fungus mass of pink colour, which may attain the size of a cherry. The vegetations may bleed very readily, but are softer and more velvety than carcinoma. (*iv.*) The ulcerating form. This is the most common type, and is a late stage of the other varieties. The ulcers are single or multiple, and have a punched-out appearance. The floor of the ulcer is covered with necrotic material and is not hard or indurated, as in carcinoma. The most common symptom in the early stages is a slight mucopurulent discharge, and there is frequently some bleeding after coitus. In the later stages the discharge tends to be purulent and not watery, as in carcinoma. The treatment should be directed towards a complete eradication of the disease, if the active tuberculosis is confined to the genital organs. This may be effected by cautery, amputation of the cervix or by pan-hysterectomy. Medicinal and hygienic treatment is of little service. In the case reported pan-hysterectomy was performed by the vaginal route. One year later there was a recurrence of the tubercular process in the vault of the vagina. Pathologically the specimen revealed old tubercular trouble in the tubes, with recent disease in the fundus and cervix. The patient was in good general health. Her only complaints were of slight discharge and slight bleeding after coitus. The external *os* was bright red in colour and had a small ulcer on the posterior side.

(88) Accidental Hæmorrhage.

William Smyly (*Dublin Journ. Med. Science*, June, 1919) discusses the subject of accidental hæmorrhage, and especially its connexion with puerperal eclampsia. One of the essential characteristics of eclampsia is hæmorrhage, most commonly minute petechial hæmorrhages, but occasionally very extensive, serious and even fatal bleeding. He suggests using the term eclampsia for those cases in which convulsions occur and eclampsism for those in which there is pre-eclamptic toxæmia without convulsions. In the present state of knowledge, it is impossible to ascertain in what proportion of cases premature separation of the normally situated placenta is associated with albuminuria, but he is of opinion that the greater number, if not all, of the cases of severe hæmorrhage are due to eclampsism. This is especially the case with concealed hæmorrhage. He has previously recorded three cases and now reports two more. Since the introduction of the treatment of this condition by abdominal section, it has been shown that blood is not only found inside the uterus, but that there are effusions of blood into the muscular wall of the uterus and at times into the cellular tissue of the pelvis. He mentions numerous cases from the literature which tend to prove that accidental hæmorrhage is due to eclampsism. He gives details of two cases. In each Cæsarean section was performed at the Rotunda Hospital. The patient in the first case had scanty urine, loaded with albumin. She was admitted with concealed accidental hæmorrhage. The second patient had been under treatment for eclaspsism in the hospital for five days before the hæmorrhage started. In both cases the uterus was removed and both patients recovered.

(89) Tubal and Ovarian Hæmorrhage.

In considering ovarian and tubal hæmorrhages, excluding those due to tubal pregnancy, overwhelming trauma and hæmophilia, Bovée (*Surg., Gynec. and Obstet.*, February, 1919) states that they are not rare conditions and are often very serious. Tubal hæmorrhage may be caused by venous stasis due to pressure from tumours, by vicarious menstruation and by local infection. Ovarian hæmorrhage may be confined to the ovary, producing one or more hæmatomata or may be intraperitoneal, producing hæmatocele. In the former variety it may occur in the stroma, into new growths or into follicles in any stage of development. Ovarian hæmorrhage is more likely to occur at or about a menstrual period and often occurs at puberty. Stromal hæmorrhage is commonly preceded by infection of the ovary, producing a sclerocystic condition. The ovary may show multiple petechial hæmorrhages. The hæmorrhage from a maturing follicle, owing to the greater vascularity, is apt to be more severe than that from an atresic follicle, but the writer believes that the latter is more common. Hæmorrhage from the *corpus luteum* is more likely to occur during the earlier stages, when it is more vascular; it may occur into the luteal cavity or into the peritoneal cavity. With tubal hæmorrhage there are no diagnostic symptoms. With the different types of ovarian hæmorrhage, careful analysis of a case might permit differentiation of the varieties. At and before puberty the follicular variety is commoner. In later years with increased risk of infection the stromal variety is more common. These patients often give a history of long standing pelvic disease. When an operation is performed for intraperitoneal hæmorrhage, the microscope is often of value in deciding whether the case is due to extrauterine pregnancy or not. In the milder forms rest and anodynes may meet all indications. In the severer forms the same rules apply as in the treatment of ectopic pregnancy.

(90) Continuation of Abdominal Pregnancy After Uterine Perforation.

J. G. Bishkow reports the following case (*Journ. Americ. Med. Assoc.*, June 7, 1919). The patient failed to menstruate in June, 1918, and had catheters passed into the uterus by a midwife upon two occasions. There was abdominal pain and slight hæmorrhage after the last catheter had been passed. Menstruation occurred in February and March, 1919. On April 14, 1919, she had acute abdominal symptoms. A sound was passed into the uterus while the patient was under the influence of an anæsthetic and a perforation was detected. An abdominal section revealed free blood and clots in the abdominal cavity and a fœtus of about five months' development lying among the intestines. The cord extended into the uterus, which was only slightly enlarged and had a transverse tear, through which the greater part of the placenta had escaped. The placenta was attached to the tear and to the fundus. The capacity of the uterine cavity was about 7 c.cm.. A ruptured false sac was found, consisting of the membranes covered by a fibrinous deposit. Supravaginal amputation of the uterus was performed. The author states that only two similar cases have been recorded.

INFLUENZA AND MARITIME QUARANTINE.

(Continued from page 181.)

Influenza Vaccine and Inoculation.

Dr. W. J. Penfold deals in the space of fifteen pages with the scientific work preceding the preparation of influenza vaccine, the manner of preparation and the prophylactic and therapeutic value of the vaccine. He prefaces his remarks by referring to the experience in England and other parts of the world in regard to the bacteria discovered in connexion with cases of pandemic influenza. It was generally held that *Bacillus influenzæ* (Pfeiffer) is usually associated with cases of influenza, but death is due in the majority of cases to pneumococcal and streptococcal respiratory complications. The suggestion that the disease may be due to a filter passer is as yet unsettled. When influenza was threatening the Commonwealth, it was determined to prepare a vaccine containing *Bacillus influenzæ* and other organisms found in the sputum and tissues of persons suffering from influenza. In January Dr. McMeekin, the Medical Superintendent of the Melbourne Hospital, applied for culture media suitable for the culture of the influenza bacillus and, after a short time, Dr. Penfold was enabled to examine slopes which contained bacilli indistinguishable from these bacteria. From the sputum of Dr. McMeekin's patients Gram-negative hæmophilic organisms were isolated. They corresponded morphologically and culturally with *Bacillus influenzæ*. In addition, virulent and non-virulent pneumococci, various types of streptococci, *Micrococcus catarrhalis* and a Gram-positive diplococcus were found. In all, 54 samples of sputum and naso-pharyngeal swabbings were investigated. The results are given in tabular form. In all but six pneumococci were recovered; streptococci were found 27 times, the Gram-positive diplococcus was found 22 times, Gram-negative diplococci were discovered 24 times and in a twenty-fifth instance a note of interrogation is attached; *Bacillus influenzæ* was found ten times, while in three instances there was some doubt as to the identity of a sparse growth. Lastly, *Micrococcus tetragenus* was recognized eleven times. Of four blood cultures, two proved sterile. In one a Gram-negative non-hæmophilic bacillus and in the other a pneumococcus were found. The pneumococcus grew when 10 c.cm. of blood was implanted, but failed to do so when 5 c.cm. were used. Material obtained after death was employed for bacteriological examination on seven occasions. In all the pneumococcus was grown. The influenza bacillus was recovered four times, a true hæmolytic streptococcus was grown once and a streptococcus (not further described) was grown once. Finally, staphylococci were found on two occasions.

Dr. Penfold describes the criteria on which the recognition of the various bacteria was based. In regard to the pneumococci, all the strains obtained *post mortem* proved to be soluble in bile, while 66% of those cultivated from the sputum and naso-pharyngeal mucus were soluble in bile and the remainder were insoluble in this medium. Attempts were made to classify the pneumococci isolated by antisera prepared in Australian rabbits, but up to the time of reporting the results were unsatisfactory.

In November the influenza bacillus had not been isolated, and consequently a "coryza" vaccine was prepared similar in all respects to the influenza vaccine subsequently prepared, save that the influenza bacillus was not included. In December this vaccine was replaced by a vaccine of the following composition:—

VACCINE "A."

B. influenzæ	25 millions per c.cm.
M. catarrhalis	25 millions per c.cm.
Pneumococcus	10 millions per c.cm.
Streptococcus	10 millions per c.cm.
Gram-negative diplococcus	10 millions per c.cm.

VACCINE "B."

B. influenzæ	125 millions per c.cm.
M. catarrhalis	125 millions per c.cm.
Pneumococcus	50 millions per c.cm.
Streptococcus	50 millions per c.cm.
Gram-negative diplococcus	50 millions per c.cm.

The doses employed did not differ materially from those suggested by the committee appointed in England to consider the advisability of having recourse to prophylactic vaccination. In South Africa Lister used very large doses in the prophylaxis of pneumonia with good results, but Dr. Penfold points out that the disease with which Lister was dealing was not influenzal pneumonia. The following considerations are cited as having militated against the use of large doses. (*i.*) It is not easy to produce a great volume of growth. "Lister could not produce 40,000 doses of his vaccine on short notice." (*ii.*) The Commonwealth vaccine had to contain several organisms. (*iii.*) There was no convincing evidence that large doses are needful. Cole and Moore and Henderson Smith are quoted in support of the contention that small doses yield relatively large amount of antibodies. It was thought that persons suffering from chronic infections with any of the organisms contained in the vaccine might on inoculation respond with general and focal reactions of considerable severity. It was therefore held that the first dose should be a small one. The pneumococci used in the preparation of the vaccine were derived from many sources, both in infections met with in quarantine and in Australian patients. The vaccines were made as polyvalent as possible. It is claimed that the polyvalency appears to be a good substitute for typed pneumococcal vaccines, since the polyvalent vaccine would contain the types prevailing in Australia. The several sources of the bacteria used in the preparation of the vaccines are given in a special table.

Special chapters are reserved for descriptions of the media employed, for the methods adopted in collecting and standardizing the stock emulsions of bacteria and in testing the sterility of the vaccines. These descriptions are excellent and may serve as guides for laboratory workers having to prepare large quantities of vaccine. The total amount of vaccine produced between October 15, 1918, and March 15, 1919, was 3,000,000 doses (cubic centimetres). Only one complaint concerning the quality of the vaccine was received. In this instance it appeared that the vaccine was contaminated with a sporing bacillus. Tests proved that the batch from this sample as derived was sterile. Dr. Penfold finds it difficult to accept the suggestion that the contamination occurred during the process of bottling, as a very careful technique is employed. The alternative is that the contamination occurred after issue. Anomalous reactions may be explained by such a contamination. This demonstrates the necessity of prolonged boiling of instruments used in the injection of vaccines.

The Prophylactic Value of the Vaccine.

In order to ascertain the prophylactic value of the vaccine, the information supplied by the Victorian Railway authorities has been utilized. It appears that 11,402 men are employed in the metropolitan and suburban districts. Of these, 745 were inoculated once, 4,410 were inoculated twice and 6,247 were not inoculated at all. The period of observation began on January 24, 1919, and ended exactly six weeks later, on March 7, 1919. The number infected in each group was as follows:—

Inoculation.	Number.	Number Infected.	Proportion Infected.
Uninoculated	6,247	252	4%
Once inoculated	745	61	8.2%
Twice inoculated	4,410	95	2.1%

Dr. Penfold states that the interpretation of these figures, that individuals once inoculated are more susceptible than those who have not received any vaccine, is "illegimate." He points out that the 4,410 persons who were inoculated twice, necessarily passed through the stage of being once inoculated. This stage lasted one week in each instance. He therefore transfers 745 to the once inoculated group, representing one sixth of the total exposure of the persons in the group. This brings the once inoculated to 1,480 and the percentage incidence is therefore 4.1% as compared with 4.03% among the uninoculated. The 4,410 has consequently to be reduced to 3,675 and the incidence works out at 2.5%. He deduces from this calculation that a single inoculation does not increase the risk of infection, while two inoculations reduces the risk to five-eighths of that of the inoculated.

Reference is made to the conclusions arrived at by Surgeon-Lieutenant Temple-Grey in an article published in this journal, which is called *Australian Medical Journal* in error. Dr. Penfold points out that the evidence adduced was not properly controlled. Moreover, mention is made of the fact that some of the persons said to be protected by the vaccination subsequently developed influenza. The disease, however, is stated to have been of a very mild nature, indicating that "a large measure of protection still existed in the population." Dr. Penfold holds that a greater degree of protection was afforded in the persons dealt with by Surgeon-Lieutenant Temple Grey than in the Victorian Railway employees and that this was due to the fact that they received large and more frequent doses of coryza vaccine than did the latter.

The Value of Vaccination in Reducing Case Mortality.

Dr. Penfold does not deal with the subject of the determination of the value of vaccination in reducing the mortality of influenza, as this is worked out by Mr. T. M. Cherry in a separate chapter of the report. Relying on Mr. Cherry's findings that the case mortality among the uninoculated is three times that among the inoculated, and taking into consideration that vaccination reduced the case incidence in the proportion of eight to five, he deduces that for every five inoculated persons who die of the disease, there will be 24 uninoculated persons succumbing to the disease. The figures presented by the Railway authorities are rejected on account of their small size. Of the 252 uninoculated persons who were infected, six died; of the 95 twice inoculated persons similarly affected two died and, finally, of the 61 once inoculated infected persons four died. Emphasis is laid on the fact that the entire population on board the *Encounter* had been vaccinated, and while no less than 92 individuals were infected, not a single death occurred. This is the most extensive outbreak without a death in any vessel dealt with by the Quarantine Service. Similarly, it is suggested that the fact that the 78 persons who contracted influenza after thorough vaccination suffered mild attacks, should be correlated with the fact that the whole of the ship's population had been twice inoculated.

Therapeutic Value of the Vaccine.

No evidence is offered in support of any therapeutic value of the vaccine. It is stated, however, that the medical officers employing the vaccine in the treatment of influenza claimed that its beneficial effect on the clinical course was unmistakable.

The Value of Inoculation.

Mr. T. M. Cherry has been engaged by the Quarantine Service to make a statistical analysis of the information available, for the purpose of ascertaining the value of inoculation with vaccine. It appears that information concerning 3,831 patients treated at the various isolation hospitals in Melbourne, has been collected. This information has been utilized for the purpose of ascertaining as far as possible the effect of inoculation upon the death-rate and upon the type of infection. It has further been utilized to determine the influence of early admission to hospital on the death-rate and type of disease. In the last place, Mr. Cherry turns his attention to the problem of a possible negative phase resulting from inoculation.

In order to classify the cases of illness according to their severity, he recognizes three types which he calls "A," "B" and "C" types. "A" type denotes mild influenza with no complication. "B" type denotes mild influenza with mild pulmonary complications, including bronchitis, laryngitis, tracheitis, pharyngitis, alveolitis, etc.. "C" type denotes toxic or fulminating influenza with severe pulmonary complications, such as pneumonia, broncho-pneumonia or pleurisy. Mr. Cherry has further divided his material into classes. There is the uninoculated class, the "indefinite" class, which covers patients concerning whom no information as to the fact of inoculation was obtained, the once-inoculated class, the twice-inoculated class and the indefinite-inoculated class. Patients included in the last class were those who had been inoculated, although the number of inoculations and other details concerning it were unknown.

Before proceeding to a tabulation of results, Mr. Cherry points out that he regards the dates of inoculation provided as reliable, although in many cases these dates were given indefinitely. The date of admission to hospital is also reliable, while the date of the onset of the disease is subject to error. He feels justified in making allowance to correct the error in the frequency curve for the period between the onset and admission, which arose because patients frequently gave the date of onset in round numbers at a week before admission. In regard to the type of disease, he admits a great deal of uncertainty. The resident medical officers at the several hospitals varied in their interpretation of "A," "B" and "C" types of cases. Among the once-inoculated, the frequency of "B" type cases is given at 42%. It appears that at one hospital all the cases were returned as "B" type cases, whereas there were only 36 "B" type cases among the once-inoculated on the returns from all the other hospitals. Want of unanimity concerning complications was also met with. Mr. Cherry considers that many medical practitioners do not regard pneumonia as a complication, but enter it as a regular manifestation of so-called pneumonic influenza.

Among the non-inoculated, there were 937 cases of type "A," 389 of type "B" and 276 of type "C." There were 218 deaths among the type "C" cases. In the "indefinite" class there were 290 of type "A," 176 of type "B" and 215, with 139 deaths, of type "C." In the twice-inoculated class there were 259 of type "A," 124 of type "B" and 101, with 19 deaths, of type "C." Of the once-inoculated, there were 135 of type "A," 134 of type "B" and 43 of type "C." Among the last group there were nine deaths. In the class "inoculated but indefinite" there were 164 of type "A," 52 of type "B," 36 of type "C," with eight deaths. The following is an abridged table, showing the percentages of deaths in the different classes. Mr. Cherry also gives the percentages of the three types.

Class.	Number of Cases.	Number of Deaths.	Percentage of Deaths.	Percentage of Deaths to Number of "C" Type Cases.
Not inoculated ..	2,002 ..	218 ..	10.9 ..	32.25
Indefinite	681 ..	139 ..	20.4 ..	64.6
Twice inoculated ..	584 ..	19 ..	3.25 ..	18.8
Once inoculated ..	312 ..	9 ..	2.9 ..	20.9
Inoculated but indefinite	252 ..	8 ..	3.2 ..	22.2
Total inoculated ..	1,148 ..	36 ..	3.1 ..	20.0
Not inoculated (corrected by allotting the "indefinite" class)	2,440 ..	337 ..	18.8 ..	39.8
Inoculated (corrected by allotting the "indefinite" class)	1,391 ..	56 ..	4.0 ..	24.9

Mr. Cherry deals with the treatment of the "indefinite" class. He states that the high percentage of deaths explains the indefiniteness of the class, rather than that the indefiniteness explains the high percentage. The class must be regarded as containing many of the more serious cases from the inoculated and the uninoculated classes. The "indefinite" cases have therefore been divided proportionately between the uninoculated and the inoculated classes.

Mr. Cherry further explains the basis on which he has calculated errors arising from the variation of the actual samples chosen and from mistakes in counting of cases in the taking of histories and in the filling in of the cards. Although the second source of error undoubtedly occurs, no correction can be made in the absence of quantitive evidence. He prefers to calculate the errors of sampling as standard error, rather than as probable error. The mathematical calculations are given in sufficient detail to render them intelligible.

He regards the figures obtained by correcting the total of non-inoculated and inoculated classes by allotting the "indefinite" class, as the most probable figures. He points out that the death-rate among the uninoculated is three times that among the inoculated. The percentage of serious cases among the former is twice that among the latter and, of these persons, fewer of the inoculated die than of the uninoculated.

In the tables the numbers relating to complications are also given. He regards these numbers as too indefinite to admit of deduction. He states, however, that the figures indicate that the proportion of those having any particular complication is little influenced by inoculation. In the next place, he finds that there is no essential difference between the figures for the once and for the twice-inoculated classes. This means that among the material analysed, one inoculation produced as great a protective action as two.

The Effect of Admission to Hospitals on the Mortality and Virulence of Influenza.

Mr. Cherry sets up some tables showing the day of disease on which patients were admitted to hospital. From these tables it is seen that the number of days elapsing between the onset and the admission are not accurate. It is admitted that "0" days means anything between the moment of onset and nearly 24 hours and that 1 day means any period from 12 to 48 hours after the onset. Again it is pointed out that the figures given for 7 days are larger than those for 6 or 8, as the patients frequently gave a week as the period. Mr. Cherry endeavours to overcome this difficulty by adopting smoothed values. Among the not inoculated there were 75 who were admitted within 24 hours of the onset. Of these 13 were classed among the "C" type of disease and there were 5 deaths. Among the inoculated there were 141 patients, of whom 8 had the "C" type of disease and 1 died. The figures for the 1-day group were 234 uninoculated, with 35 "C" types and 7 deaths; 118 inoculated, with 11 "C" types and no deaths. For the 2-day group, there were 222 uninoculated, with 54 "C" types and 5 deaths; 85 inoculated, with 8 "C" types and 3 deaths. For the 3-day group, there were 146 uninoculated, with 46 "C" types and 19 deaths; 42 inoculated, with 9 "C" types and one death. For the 4-day group, there were 112 uninoculated, with 42 "C" types and 13 deaths; 32 inoculated, with 11 "C" types and 5 deaths. For the 5-day group, there were 85 uninoculated, with 43 "C" types and 24 deaths; 22 inoculated, with 8 "C" types and 5 deaths. For the 6-, 7- and 8-day groups, there were in smoothed values 71, 58 and 48 uninoculated persons, of whom 35, 27 and 24 were suffering from "C" type influenza and 15, 14 and 12 died. Among the inoculated the figures were respectively 15, 11½ and 5½, while there were 8, 5, and one classified as type "C" and 2, 2, and one death.

In another table Mr. Cherry gives the percentages. From the figures it is seen that the percentage of severe or type "C" cases among the uninoculated represented 17.3% of the group of persons admitted within the first 24 hours of illness, while it represented only 15.1% of the group of persons admitted on the first day. In each succeeding group the percentage gradually increased to 48% in the 7-day group. The severe cases among the inoculated represented 6% for the group of "0" day, 7.1% for the group of "1" day and gradually increasing numbers up to 50% for the group of "7" day. Death took place among the uninoculated in 6.7%, 3%, 4.5%, 10%, 18%, 24%, 27% and 25% of the total number in each group respectively, and among the inoculated in 0.1%, 0.4%, 1.8%, 66%, 14.3%, 18%, 17% and 15% respectively. The results are plotted in curves and explanations are given concerning the methods adopted in arriving at the smoothed values and at the standard errors. Although it is not specifically stated, it appears that the "indefinite" class is distributed proportionately between the inoculated and the uninoculated as before.

The deductions that Mr. Cherry makes from these calculations are, firstly, that the apparent frequency of admission within the first 24 hours of the onset is explanable on the assumption that persons walk about with mild symptoms of influenza for a few days and are then seized suddenly in the street with the signs of a cardiac or cerebral complication. The second conclusion is a suggestion to account for the fact that maxima for the curves of types "A" and "B" occur a day earlier in the inoculated class than in the uninoculated. He supposes that a person who has the forethought to be inoculated, would be wise enough to go to a hospital as soon as possible after the onset of the disease. The fact that the curves for the inoculated and for the uninoculated correspond closely to one another, is noted and from the curves it is gathered that delay in seeking admission to a hospital is accompanied by an increase in the death-rate. Mr. Cherry finds that the lower death-rate among the inoculated is to some extent accounted for by the earlier date of admission to hospital.

The Negative Phase.

An endeavour is made to ascertain whether inoculation is followed by a negative phase. The curve plotted according to the period between the inoculation and the onset of the disease fails to yield any useful information, since the number of persons available two months after inoculation is so low that the frequency curve returns to the base line. Attacking the problem from another aspect, Mr. Cherry selects a period of 24 days in order to obtain a population inoculated at approximately the same time and subjected to equal risks of infection throughout the whole period. The final curve attained is based on small numbers and the errors of sampling are said to be large. The conclusion drawn from the figures is that it remains uncertain whether there is any increased liability to infection shortly after inoculation or whether there is a delayed onset of immunity.

The Forms of Disease.

In the second part of his contribution Mr. Cherry endeavours to draw some deductions from a comparison of the statistics of the cases observed in quarantine and of the statistics of the cases occurring among the general population of Melbourne. The number of persons affected in quarantine was 1,767, of whom 1,120 were in New South Wales, 550 in Western Australia, 52 in South Australia and 45 in Victoria. The material is handled in a manner similar to that in which the material collected from the hospitals in Melbourne is handled. Tables are set up showing the severity and mortality of the disease from each ship. In the case of the *Medic*, it is noted that 179 persons are included, notwithstanding the fact that this group is entered as indefinite as far as inoculation is concerned. Among the groups included under the rubric of "not inoculated," the lowest mortality was 1.1% (various ships at New South Wales Quarantine Station), the second lowest was 4.5% (the group from the *Manuka*), the third lowest was 4.7% (the not-inoculated group of the *Medic*) and the highest was 47% (fifteen cases on board the *St. George*). The mortality in the indefinite group from the *Medic* was 3.9%. The death-rate among the inoculated varied between 0 among the troops on board the *Encounter* and among the 27 persons infected after inoculation in the Quarantine Station in South Australia and 13.3% in Victoria. It is noted that indefinite class in South Australia comprising 25 individuals was also devoid of a death. Mr. Cherry finds that in a certain number of cases the death-rates are abnormally high, as compared with the Melbourne death-rate. On excluding the coloured patients from these statistics, the death-rate is found to be approximately the same as that among the population of Melbourne. In regard to the abnormally low rates, Mr. Cherry holds the opinion that the fluctuations of sampling are sufficient to explain this fact in the majority of cases. In some instances, however, this is not the case. Nor is the effect of early admission to hospital sufficient to account for the low rate. It is shown, nevertheless, that the early admission to hospital does produce a marked effect in the lowering of the death-rate. The curves and tables referring to these matters are set up in a manner calculated to bring out the points indicated.

Masks and Inhalation Chambers.

The final chapter of the report is devoted to a short discussion on the uses of masks and inhalation chambers in the prevention of the spread of infection. As far as masks are concerned, the following defects are admitted: (*i.*) Obstruction to respiration, (*ii.*) heat and stuffiness, (*iii.*) inaccurate fitting, (*iv.*) careless wearing and (*v.*) neglect of cleanliness or antiseptic precautions. The value of masks in practice is said to be limited to protection against gross infection at short range, under conditions involving short duration to exposure. It is stated that even in the absence of absolute protection, a properly fitting mask of satisfactory material appears to afford a substantial protection if the defects can be avoided. The experience gained at the various quarantine stations teaches that the value of the masks for nurses who are exposed for prolonged periods to infection, is proportionate to the strictness with which the masking regulations are enforced. Dr. Cumpston points

out that the wearing of masks by patients is obviously an additional protection, when this can be carried out. He concludes this part of the report by asserting that the psychological advantages of masking are not capable of being accurately assessed.

A detailed description of the apparatus employed for spraying solutions of zinc sulphate for inhalation is given. Dr. Cumpston finds that the procedure has proved somewhat disappointing. It appears to have an effect in preventing and clearing up nasal catarrh, but it can also produce an increased amount of secretion. The close proximity of many people in the chamber and the difficulty in preventing chills when these people pass from the warm atmosphere to the cool outside air counteract the beneficial effect. It is suggested that a more suitable substance than zinc sulphate is needed for large scale inhalation. Inquiries are being made with the view to improving this means of nasopharyngeal medication.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on August 6, 1919, Dr. J. Ramsay Webb, the President, in the chair.

Dr. Thomas Murphy read a paper entitled "A Review of 200 Cases of Sub-total Hysterectomy" (see page 187).

Dr. G. Rothwell Adam, in opening the discussion, said that he wished to thank Dr. Murphy for his very interesting paper. Dr. Murphy had covered a large field and had given them a review of some very carefully planned work. A large part of the paper was devoted to the technique of the operation for sub-total hysterectomy, and, although it might be said that the present-day technique had become more or less stereotyped, he would remind them that there were certain definite principles governing the operation. After 35 years' experience it would, perhaps, be not out of place if he reviewed briefly the evolution of the operation for sub-total hysterectomy. The first case had been done by accident. Keith, of Edinburgh, operating for a very adherent ovarian tumour, found on subsequent examination of the removed specimen that the uterus had been included. In what he might call the first phase of the operation, in which hæmostasis in the cervical stump was the crux of the position, the amputation of the uterus and subsequent control of the stump were effected by the application of the *serre nœud*.

Dr. Adam related several experiences of this method, including an instance in which the *serre nœud* had been responsible for serious trouble, owing to the inclusion of portion of the bladder in its grip. Sloughing of the affected portion of bladder, of course, took place, and the resulting vesico-vaginal fistula was very difficult to deal with by the methods at command in the days of which he was speaking. The method of the *serre nœud* was succeeded by pan-hysterectomy. The two chief difficulties associated with this operation were (1) avoidance of injury to the ureter and (2) control of hæmorrhage. The third phase was entered upon when the application of more exact anatomical knowledge rendered it possible to secure at the outset the four cardinal vessels, thus obviating what had been for a long time a real drawback, *viz.*, the difficulty of securing hæmostasis.

Where the configuration of the tumour or the presence of adhesions, or both factors combined, rendered its delivery from the pelvis difficult, the situation could often be met by dividing the tumour completely down the centre. The operator was thereby enabled to get below the mass; one half, with any extension into the broad ligament, was then turned out and the uterine artery of that side secured. A similar treatment was accorded the other half. He had found this method facilitate the removal of tumours whose size and configuration rendered their removal intact an extremely awkward process. It was really an application of the principles adopted by Howard Kelly in dealing with cases where the presence of inflamed appendages rendered delivery of the uterus and associated myomata difficult. With regard to the best manner of dealing with intestinal adhesions, Dr. Adam stated that he was in complete agreement with Dr. Murphy's practice, as set forth in the paper they had just heard. That the procedure of leaving a small piece of tumour attached to the intestine was a sound one was evident from the uniformly good results among a large series of cases in which Dr. Murphy had made it a routine. The attempt to divide firm adhesions between the intestine and the uterine mass only too often led to damage to the bowel, stripping of its peritoneum and serious risk of subsequent peritonitis. For a long time he had made it a point to fasten the round ligament and the top of the broad ligament on either side to the cervical stump. He had seen cases of prolapse of the cervix, the cervix even presenting at the vulva, after sub-total hysterectomy and had attributed it to neglect of the simple precaution he had mentioned. There was no doubt that the procedure restored the tension of the pelvic floor and thus operated to obviate subsequent prolapse.

Dr. F. A. Nyulasy prefaced his remarks with a tribute to the care and efficiency displayed in the work surveyed by Dr. Murphy.

With regard to ligatures, he understood that Dr. Murphy used catgut for all buried ligatures. It was remarkable what difference of opinion still existed on this point among distinguished authorities. Whereas the Middlesex Hospital School, led by Bland Sutton, in common with Berkeley and Bonney, had entirely given up the use of catgut, it was advocated by W. H. Battle and by Pearce Gould for all buried sutures. His own experience had led him to a preference for silk ligatures in the operation of hysterectomy, especially for the uterine vessels.

Regarding the operation itself, he asked members to recollect that when it was first introduced the mortality was simply tragic. He pointed out that it was only since 1889, when the genius of Stimson indicated the points of attack, *viz.*, the uterine and ovarian vessels, that it had become one of the most beneficent of the operations performed by the surgeon.

Continuing, Dr. Nyulasy emphasized that the success of the operation depended on two essential factors, *viz.*, perfect asepsis and perfect hæmostasis. The real crux of the operation was to be found in the uterine arteries, which lay in close relation to the cardinal ligaments in the base of the broad ligament. In the process of hysterectomy, after the anterior flap carrying the bladder with it had been reflected down from the front of the uterus, the uterine artery, running along the middle and inner portion of the cardinal ligament, could be isolated by the finger from the posterior layer of the broad ligament. An aneurysm needle, armed with a ligature, was then passed under the vessel, which was secured with little or no risk to the adjoining veins and ureter, even when the latter occupied an abnormal position, as it sometimes did. The mention of the cardinal ligaments reminded him that these important structures were at last beginning to occupy their true position in anatomy, if not yet in surgery. Professor Hastings Tweedy had recently read a paper at the Royal Academy of Medicine in Ireland on the supports of the uterus (which structures he had termed the tendons of the uterus) and their relations to the lower uterine segment. The authority referred to said that gynæcologists were, or should be, agreed that the uterus owed its stability to fibro-muscular bands, radiating from the muscles surrounding the *os internum*. At the same meeting Professor A. F. Dixon stated that the supports of the uterus were the structures in the sub-peritoneal tissue. Some support, in addition to that furnished by the *levator ani*, was necessary to prevent the uterus being thrust downward or telescoped into the vagina by intra-abdominal pressure. The support was mainly applied at the lateral aspect of the cervix and at the lateral fornix of the vagina. Here the sub-peritoneal tissue was packed with smooth muscle and connective tissue fibres, radiating outwards along with the vessels and nerves which abounded in that region. Professor Dixon had thus emphasized the important relations of the cardinal ligaments to which he (Dr. Nyulasy) had alluded. He proceeded to demonstrate from a dissection made several years ago the cardinal ligaments and their relation to the cervix and sub-peritoneal tissues.

Dr. Nyulasy's concluding remarks had reference to the subject of pulmonary embolism, which, he said, occurred very frequently after abdominal hysterectomy, but very

rarely after the vaginal operation. A broad study of the statistics indicated that it might occur in about 1% of abdominal hysterectomies for fibroids. Yet Bland Sutton had lost only three patients from this cause out of 1,500 cases, and in one of these the fibroid was complicated by cancer of the corporeal endometrium. A factor contributing to the occurrence of pulmonary embolism suggested by Clark, of Philadelphia, was that the primary clotting took place in the deep epigastric veins, injured by the metal retractors used in keeping the abdominal wound open. Bland Sutton had indicated another possible cause in the presence of infected buried ligatures in the abdominal wound; these ligatures may have become tainted after a septic cervix or other focus had been handled. By way of prevention, Bland Sutton swabbed the cervical canal and stump with tincture of iodine and immediately washed his gloved hands in soap and water and weak biniodide solution. In a definitely septic case he never used buried sutures, but adopted the "through-and-through" plan and had pointed out elsewhere that surgeons generally were returning to simpler methods of abdominal closure.

Dr. A. Norman McArthur said that so many points had been considered by Dr. Murphy that there remained only very minor things for him to suggest. Some time ago he was urged to abandon the procedure of puncturing the broad ligament and tying it in favour of initial clamping of the vessels and subsequent ligation. After some experience of the latter method he failed to see any advantage for it and had consequently reverted to his former practice, *i.e.*, transfixion of the broad ligament. He had seen the method of transfixion in the hands of a past master in pelvic surgery, the late Mr. M. U. O'Sullivan; certainly the records of his own cases had afforded him no indication to depart from this method of securing the vessels.

In transfixing the broad ligament he used an ordinary blunt needle in a needle-holder and thought that an aneurysm needle was not at all necessary. In his experience, the abdominal retractor of Dr. Ralph Worrall had proved an exceedingly useful instrument; by extending well down this retractor provided protection for the bladder and was also a good reflector of light.

Dr. McArthur emphasized the advantages gained by carrying the incision well down to the *symphysis pubis* in the manner indicated by Dr. Murphy.

If he might offer some criticism as to the value of sub-total hysterectomy in *fibrosis uteri*, it would be that the sub-total operation was scarcely adequate in this condition. He had notes of 33 cases of *fibrosis uteri* in which recurrence of hæmorrhage had occurred after sub-total hysterectomy and in many he had had subsequently to remove the cervix. He recommended the procedure of "coning out" the cervix, well down into the vagina, by which method the cardinal ligaments were left intact for the stump. In the absence of some such mode of dealing with the cervix, there was a considerable risk of hæmorrhage ensuing.

When myomectomy was adopted for the removal of fibroids it was necessary to warn the patient of the probable necessity for a larger operation later on. Although the larger myomata might be of such a nature as to lend themselves to myomectomy, the seeds of future myomata were almost invariably present, and these would become dominant in the course of a few years. However, in the case of young women, a great deal might be gained by preliminary myomectomy, as they might be enabled to have several children before the ultimate hysterectomy became necessary.

In reply to Dr. Nyulasy, Dr. McArthur said that his choice of ligatures was entirely based on what he had found to be most useful. He personally could see no objection to catgut; possibly bad results attributed to catgut were in some instances really due to faulty tying.

He would urge the importance of a careful vaginal toilet in all cases in which sub-total hysterectomy was contemplated. It was not always possible to foretell how far one would have to proceed once the abdomen was opened. With the vagina properly prepared the surgeon was in a much better position to open this passage, if necessary. For vaginal sluicing he used iodine liberally, in much the same manner as it was used on the skin.

The speaker drew attention to the advantage derived by commencing the suturing of the peritoneum at the upper angle of the incision. When sutures were brought from below upwards he had often seen difficulty arise with the last one or two; no such trouble was encountered when the suturing was performed in the reverse direction.

In conclusion, Dr. McArthur stated that he had found Dr. Murphy's paper full of interest and expressed his appreciation of the trouble to which Dr. Murphy must have put himself in order to lay such an excellent paper before them.

Dr. R. H. Morrison expressed his thanks to Dr. Murphy for his paper, but he was rather disappointed that the subject had only been considered in relation to fibro-myomata. It appeared to him that the important point calling for decision in any particular case was the removal or retention of the cervix. In a nulliparous woman with a fibroid the cervix might safely be left, but in a multipara with a much lacerated cervix its removal had to be considered, in view of the possibility of malignant disease supervening and because the cervical glands were often infected. In myomata complicated with adnexal infection the simple sub-total operation was not sufficient. It was advisable to treat these cases as one would an infected uterus and tubes, also by "coning out" the endocervix, or, better still, by doing a complete hysterectomy. The latter could often be more easily done in two stages of (1) sub-total hysterectomy and (2) ablation of the cervix. It seemed to him certain that the important factor, from the point of view of the future health of the patient, was that the endocervix, at least, should be removed, as in the racemose glands in this situation noxious organisms were lurking.

Dr. Morrison submitted notes relating to 91 operations of sub-total hysterectomy performed by him in the last 3½ years, of which 44 were undertaken for fibro-myomata. He had taken care to note the condition of the appendages, and in the series covered by the notes above referred to, there were two instances of tubo-ovarian abscess, four of hydrosalpinx, seven of pathological ovarian cysts and one of dermoid cyst. Among the 91 cases were 37 of infection in which he had elected to perform the sub-total operation, supplemented by "coning out" the cervix; but, on the whole, he was rather disappointed with the results, probably because the endocervix had not been completely removed. Three patients had returned with purulent discharges, which he was convinced could only be cured by removal of the cervical stump.

There was one death among the 91 patients submitted to sub-total hysterectomy, and during the same 3½ years one death among 86 patients on whom pan-hysterectomy had been performed. Speaking with reference to the technique of the sub-total operation, Dr. Morrison laid stress on the necessity for securing a good pelvic floor by suturing the round, the infundibulo-pelvic and utero-sacral ligaments to the cervix and then carefully "peritonizing." In infected cases he endeavoured to shut off the pelvic from the general peritoneal cavity by suturing the vesical peritoneum to the meso-sigmoid and, if necessary, the meso-caecum, and subsequently utilizing postural treatment, by sitting the patient up on her return to bed. He had an objection to the practice of grasping the uterus with powerful forceps, especially those of the toothed variety. He thought it a particularly bad procedure in infected cases. Of the 37 infected cases to which he had just referred, 25 were complicated by involvement of the tubes. Dr. Morrison related his procedure in opening the abdomen in infected cases. After all layers had been divided, the peritoneum was sewn to the edges of the skin and covered with a sterile cloth. The peritoneum could be relied upon to deal with any organisms much more efficiently than the skin and subcutaneous fat. It was in the latter situation that septic troubles in convalescence so frequently occurred.

Dr. Allen Robertson remarked that he did not quite understand why Dr. Murphy thought it necessary to bring the cervix up to the abdominal wall. He had found the procedure described by Dr. Adam quite effective in guarding against subsequent prolapse of the cervix. With reference to the relative merits of sutures and clamps in securing the principal vessels at the outset of the operation, he thought that much depended on the nature of the case. It appeared to him that, for a long operation, the advantage lay with the sutures, as prolonged compression of the tissues by clamps was thereby avoided. He quite agreed that the sub-total operation was the method of choice in dealing with fibro-myomata in nulliparous women.

Dr. Arthur Sherwin said that it had been his privilege to act as anæsthetist for Dr. Murphy on many occasions when

he had performed the operation they were discussing. To the two essentials, asepsis and hæmostasis, emphasized by Dr. Nyulasy, he would add a third, rapidity of technique. Celerity in operating, provided it was not at the expense of efficiency, was undoubtedly to the advantage of the patient, who, in all probability, was anæmic to some degree. Accurate anatomical knowledge and manipulative dexterity were the chief factors making for time-saving in operating; single ligatures, properly tied, so that re-enforcement was superfluous, also contributed towards rapid work. Where adhesions existed between the bowel and the uterine wall, he had seen uniformly good results follow the practice of leaving a thin slice of the tumour attached to the bowel.

Dr. B. Milne Sutherland spoke with reference to the point raised by Dr. Morrison regarding the necessity for removal of infected cervices. He quoted a case that had come under his notice two weeks previously, in which hysterectomy had been performed for myomata. At the time of operation activity of the cervical endometrium had been noted, and, having regard to the numerous racemose glands in this situation and the probability that they had been infected, he thought that the only sure safeguard against subsequent trouble was to remove the cervix. He further considered that the unhealthy condition of the cervix would be found frequently, and, although resection of the endo-cervix might meet the situation, he preferred removal of the cervix as a safer procedure.

It was apparent that there were two schools of opinion in the matter of ligatures. He was not wedded to silk and considered that No. 4 catgut would secure any vessel. The time element was no doubt important from the point of view of the welfare of the patient and leisurely methods of operating were to be deprecated. On the other hand, he had seen rapidity carried to the point at which the technique became unfinished. Nothing was gained by such haste, as it left flaps of peritoneum free to contract adhesions.

Dr. Dunbar Hooper congratulated Dr. Murphy on the paper he had presented, to which, as one interested in abdominal surgery, he had listened with much pleasure.

He had found a sterilized linen thread answer admirably as a ligature and adopted it as a routine.

In the issue of the journal, *Radium*, for May, 1919 (Vol. 13, No. 2), he had noticed that Howard Kelly, after 2,000 operations for fibro-myomata, had furnished a report on a series of cases treated by radium. This report summarized the results obtained with radium in 210 cases of simple fibro-myomata during the period March, 1913, to January, 1918. The average age of the patients was 43 years; in 94 cases the tumour practically disappeared; in 64 instances there was an appreciable diminution in the size of the growths and two patients were unimproved. Nine patients required operative treatment after the radium and two died of intercurrent illness. Dr. Hooper brought these figures forward as a matter of interest and wished the meeting to understand that he was not advocating, nor indeed expressing any views on radium treatment.

Mr. G. A. Syme said that, although he could not speak as a gynæcologist, yet in the course of a long experience as surgeon to a general hospital he had been called upon to perform frequently the operation of hysterectomy. He well remembered the method of the *serre nœud*, recalled by Dr. Adam; in fact, his first hysterectomy had been carried out in this manner.

A good deal of discussion had centred round the ligature material, but it appeared to him that, so long as one's ligature was aseptic, strong and well-tied, the actual material was a matter of secondary importance. He would recommend them to adhere to the particular material which they had individually found in practice to be reliable.

The discussion had brought forth no reference to sarcoma of the uterus, a condition which he had met three times in the last two years. All three appeared to be fibro-myomata, and one was reported pathologically to be such; but the pathologist had definitely labelled the recurrence as sarcoma. All three had recurred very rapidly and clinically there had been nothing to indicate that the tumours were other than fibro-myomata, except perhaps rapidity of growth and a tendency to invade the broad ligament. Operating "by the clock" was not a good course for a young surgeon to pursue. A surgeon had to acquire his technique first and foremost; but there was no doubt that rapid operating, based on experience, and a developed technique was very often of great advantage. He thought that time was gained by the use of clamps to control the main vessels in the early stages of the operation, ligatures being secured afterwards.

Dr. D. Murray Morton said that, as he had been unable to be present in the earlier part of the evening, he might speak under some misapprehension if he attempted to discuss Dr. Murphy's paper. He regarded two questions as of great importance, *viz.*, that of leaving the cervix and that of leaving the ovaries. The last thing a young surgeon should aim at was rapidity. He was impressed with the value and excellence of the paper.

The President, Dr. J. Ramsay Webb, regretted that there was not a better attendance. They had heard an excellent paper and an informative debate; but possibly the traffic restrictions had affected the attendance. He was very interested in the history of the operation of hysterectomy; it would interest him greatly to know who was the first man who had deliberately isolated and tied the principal vessels. He had been taught to tie the round ligament, the broad ligament, etc.; he thought that the procedure of "bunching" the round and broad ligaments on the cervical stump, as described by Dr. Adam, secured the cervix against subsequent prolapse. Time was saved, as there was so little suturing involved.

Dr. Murphy, in reply, thanked the contributors to the discussion and, in regard to "operating by the clock," quoted the saying that the only tick that should influence the operator was the tick of the patient's pulse. He had been very interested in the history of the operation traversed by Dr. Adam. He was afraid he could not agree with Dr. McArthur on the subject of *fibrosis uteri*, not having met with a recurrence of hæmorrhage when the cervix had been left. Indeed, he could not see from where such hæmorrhage was to come. He again thanked the members for the attention and consideration afforded his paper.

A meeting of the Western Australian Branch was held at the Perth Public Hospital on June 18, 1919, Dr. F. A. Hadley, the President, in the chair.

Dr. S. J. Cantor showed specimens of a neoplasm removed from the ovaries of a woman by Dr. F. A. Hadley and himself. Nodules had been detected in the stomach and were thought to be secondary growths.

Dr. F. A. Hadley stated that there was a large growth in the stomach and that he regarded this growth as the primary tumour. There was no spread to the peritoneum, but the lumbar glands were enlarged.

Dr. F. A. Hadley exhibited a dermoid cyst removed from an ovary. The cyst contained two teeth.

Dr. S. J. Cantor read a paper on the education and care of the blind (see page 191).

The President thanked Dr. Cantor for his very interesting paper. He enquired how long it would take an elderly person going blind, to learn to read.

Dr. A. T. White asked if more than one finger was educated to read the type. He gave an account of a visit he had paid to St. Dunstan's Hospital in London and described the methods of education employed.

In his reply, Dr. Cantor stated that elderly people going blind learnt the system very quickly. The Moon system was used under these circumstances. He stated that one finger only, namely, the index finger, was educated and that great speed could be attained in reading with one finger.

THE POST-GRADUATE COURSE AT THE MELBOURNE HOSPITAL.

A reference has already been made in *The Medical Journal of Australia* to the first post-graduate course, established primarily for returned medical officers. This course was held at the Melbourne Hospital from August 18 to August 30 and was planned in such a manner that the entire teaching staff and the material available in the hospital were placed at the disposal of those joining the course. We understand that fifty medical practitioners who had served abroad, availed themselves of this excellent opportunity.

The course began on August 18, 1919, at 9 a.m., with a short address explanatory of the scope of work and organization of the post-graduate course. The remainder of that morning was taken up with clinical work in the medical and surgical wards and in the operating theatre. Each member of the course was supplied with a time-table, from which he could learn the distribution of the work planned for any given time. Five members of the staff were giving clinical instruction in the wards. At noon there were demonstrations and practical work in the Pathological Department. From 2.30 to 5 p.m. five members of the staff held classes in the Out-Patients' Departments and the work here was so adjusted that the members had the opportunity of attending medical, surgical or special clinics. At 8 o'clock in the evening a special address and demonstration was given in the Pathological Department of the Medical School by Professor Sir Harry Allen. The subject of this address was vascular syphilis. With the exception of this lecture, all the meetings and classes of the course were held at the Melbourne Hospital. On the second day of the course practically the same programme was followed. There was, however, one addition. This was the first of five classes on clinical pathology and morbid anatomy. The class started at 9.30 and continued for two and a half hours. The work was divided into three parts. Under clinical pathology there was instruction in practical hæmatology, in the ordinary examination of urine, in the examination of test meals and in the examination of fæces. In the second part an elementary course of clinical bacteriology was introduced. In this course ordinary cultural methods were demonstrated and explained and the practical staining of smears was taught. The work included the recognition of the commoner organisms and their differentiation from allied organisms. The diagnosis under the dark ground microscope of *Spirochæta pallida* and the recognition of other spirochætes was included in this part of the work. The third division dealt with morbid anatomy and morbid histology.

On each evening at eight o'clock a special lecture or demonstration was held by a chosen expert. On the evening of August 22 there was a combined meeting of the members of the post-graduate course and of the members of the Melbourne Hospital Clinical Society. The subject of the discussion was diseases of joints. On Saturday the work was limited to the morning. On the evenings of Thursday, August 28, and Friday, August 29, there were clinical meetings, with exhibition of surgical cases on the Thursday and medical cases on the Friday. These meetings were held in the out-patients' hall.

It will thus be seen that the course was planned with care and covered the whole range of practical medicine. The demonstrations included the administration of arsenobenzol drugs, the use of instruments, splints, electro-cardiographic apparatus, the interpretation of skiagrams and special methods of diagnosis. Lectures on diseases of the joints, glycosuria and diabetes, fractures, cholelithiasis and war neurosis and its relation to work in civil life gave a very varied and many-sided aspect to the teaching.

University Intelligence.

ELECTION OF FELLOWS OF THE SENATE OF THE UNIVERSITY OF SYDNEY.

The following notice has been addressed to the graduates in medicine and in dentistry of the University of Sydney:—

A preliminary meeting of graduates in medicine of the University of Sydney was held on Wednesday evening, August 27, 1919, to discuss the best measures to be adopted to secure adequate representation of our professions on the Senate.

It was decided to call a thoroughly representative meeting of the graduates in medicine and dentistry, at which candidates will be nominated and a suitable number selected.

To prevent misunderstanding, it was resolved that all nominations should be accompanied by the written consent of the nominee.

In view of the great importance of this matter, it is expected that all graduates in medicine and dentistry will make a special effort to be present.

The meeting will be held at the B.M.A. Library, 30-34 Elizabeth Street, Sydney, at 8.30 p.m. on Wednesday, September 10, 1919.

(Signed) E. H. MOLESWORTH } Joint Honorary
P. BROWN CRAIG } Secretaries.

THE REPRESENTATION OF THE MEDICAL PROFESSION ON THE SENATE OF THE UNIVERSITY OF SYDNEY.

A meeting of members of the Faculty of Medicine of the University of Sydney was held at 30-34 Elizabeth Street, Sydney, in the rooms of the Society of Dental Science of New South Wales on August 27, 1919. Dr. E. A. Mills was elected Chairman.

Dr. E. H. Molesworth and Dr. P. Brown Craig were appointed Joint Honorary Secretaries.

The meeting, on the motion of Dr. W. F. Litchfield, with the support of Dr. A. E. Mills, carried the following resolutions unanimously, as a formal declaration of policy:—

That it is desirable that the medical profession have additional representation on the Senate of the University of Sydney.

It was moved by Dr. R. Worrall and seconded by Dr. H. S. Stacy:—

That two medical candidates, in addition to the present elected Fellow, be selected.

An amendment was moved by Dr. F. P. Sandes and seconded by Dr. H. Ritchie:—

That three medical candidates, in addition to the present elected Fellow, be selected.

The amendment having been put to the meeting, was declared lost and the original motion was then carried.

It was moved by Dr. F. P. Sandes and seconded by Dr. R. Gordon Craig:—

That those present form themselves into a committee to institute measures to obtain a representative meeting of medical and dental graduates, for the purpose of furthering the objects of the present meeting.

This motion was carried.

It was moved by Dr. W. F. Litchfield and seconded by Dr. R. Worrall:—

That a meeting be called on Wednesday, September 10, at 8.30 p.m., in the B.M.A. Library, to receive nominations and select two additional candidates for the forthcoming election of the Senate and to transact any other necessary business. Also, that nominations must be accompanied by the written consent of the nominee, unless the latter be present at the meeting.

The motion was carried.

It was resolved, on the motion of Dr. F. P. Sandes, seconded by Dr. R. Worrall, that the two Honorary Secretaries, Dr. Mills, Dr. Ritchie, and the mover be constituted a sub-committee, to compose a letter for circulation among medical graduates.

The meeting determined to supply a short notice of the proceedings for publication in the daily press and those present undertook to bear the expense incidental to the campaign.

Correspondence.

VACCINES AD INFLUENZA.

Sir,—Considering the comparatively short time that this severe type of so-called pneumonic influenza has been amongst us, the mass of literature it has called forth from medical and laymen has given the malady first place amongst the ills of the decade. My only excuse for adding a few words to the writings on the subject is that the penultimate paragraph of an article in *The Medical Journal of Australia* of July 26, 1919, by Dr. H. V. D. Baret makes me feel that at this stage of our knowledge no statement such as his regarding the use of vaccines ought to remain unchallenged. Dr. Baret says he cannot reasonably expect that by adding the reaction caused by vaccine to the ordi-

nary acute attack of influenza, any good can result. If that opinion is a true one, then there is no known disease which, having made itself evident in the human body, can be attacked and a chance of recovery afforded by the use of vaccine therapy. In other words, we may as well wipe out vaccines for curative work. This is not the teaching of our masters, nor the advice proffered by experienced men of science.

R. W. Allen[1] gives the following as the aim of vaccine treatment: "We endeavour to exploit the healthy tissues in the interest of those which are infected and unhealthy. These healthy tissues, in the attempt to protect themselves, elaborate so-called antibodies, and it is a practically invariable rule that the elaboration of these substances is carried on to a degree far in excess of immediate requirements and so become available for the destruction of the microbes."

That, in a concise form, is the modern view of vaccine therapy, and it has been borne out in influenza no less than in other diseases. The general practitioner, as a rule, in the middle of a pandemic such as we have just experienced, has little or no time for collating and recording facts regarding various forms of treatment. My father, Dr. W. B. Nisbet, and myself were fortunate enough to be working together and made it our business to go very thoroughly and extensively into the different methods of treatment suggested for influenza, and have no doubt that vaccine therapy warrants consideration in almost all stages of the disease.

The excellent and exhaustive articles on vaccines in influenza by Emery[2] and Wynn[3] in the February *Practitioner* and numerous other contributions to the medical press have only to be read to realize how honestly these eminent men believe that this method of treatment should be persisted in.

Above all things, large doses, much greater than usually employed, must be used. May be Dr. Baret did not give these big injections in his curative inoculations and so did not get the excellent results others have done.

Yours, etc.,

A. T. H. NISBET, M.B., CH.M., D.P.H..

Townsville, August 12, 1919.

THE AUSTRALASIAN MEDICAL CONGRESS AND THE FEDERAL COMMITTEE.

Sir,—I have read with interest Dr. Worral's letter on the above subject. So far as I understand the matter, it would appear that the Australasian Medical Congress, at its last meeting in New Zealand, deliberately, as a Congress, passed a resolution to the effect that future Congresses should be Congresses of the British Medical Association, as represented by its Branches in Australasia. If this is correct, it seems to me to warrant the deduction that the Australasian Medical Congress did desire "to go out of business" and did invite the B.M.A. in Australasia to carry on its work.

It is quite true that, in a way, the Australasian Medical Congress represented in the Southern Hemisphere the part played by the great international congresses held every few years in Europe, and were distinct from the annual meeting of the B.M.A. in England. But the conditions in Australasia are far different from those in Europe. We could not have successful international congresses here. We are too few in numbers and the distance from other lands is too great.

In so much smaller and more isolated a community, such important occasional gatherings could be much more easily and efficiently handled by the existing organization of the B.M.A., with the co-operation of its scattered Australasian Branches. It seems really a most sensible plan that the B.M.A. should undertake the responsibility suggested by the resolution of the Auckland Congress. This, no doubt, is a matter of opinion; but surely it is clear that that Congress did so vote and desire that the B.M.A. should shoulder the work, and it now lies with that Association whether it will undertake these duties and thereby, I really believe, increase its influence, both with governments and people.

Yours, etc.,

R. SCOT SKIRVING.

Sydney, August 27, 1919.

[1] R. W. Allen, "Practical Vaccine Treatment" (H. K. Lewis, 1919).
[2] W. D'Estie Emery, "Influenza and the Use of Vaccines," *The Practitioner*, February, 1919.
[3] W. H. Wynn, "Treatment of Influenzal Broncho-Pneumonia, with Special Reference to Vaccines."

THE NEXT MEDICAL CONGRESS IN AUSTRALIA.

Sir,—May I ask a very short space in which to make a few comments on your leading article?

You say ". . . it was not competent for the Australasian Medical Congress to pledge the Australan Branches of the British Medical Association to do a certain thing." The Congress did not pledge the Branches, but sent them an invitation which, in my judgement, it is most unwise to refuse.

Again, "There is no doubt the majority of members desire that the Branches in Australia of the British Mdeical Association should conduct the Congresses in future." Why should that not praiseworthy desire be gratified?

Again: "Has the British Medical Association in Australia power to hold a congress? . . . what steps are necessary to authorize a Branch of the British Medical Association in Australia to proceed with the organization of a congress?" In so much as there is no article or bye-law which forbids holding such a congress, why not hold it and trust to the generous sympathy which has always been extended to us by the Council of the parent association?

"The steps necessary" are a resolution of the Federal Council dictated by common sense requesting the Queensland Branch to proceed on well established lines with the organization of a Congress relying exclusively on the aid of its own members. The energy and public spirit for which the Queensland members are noted, will do the rest.

Again, "A Congress of the British Medical Association could scarcely be held in 1920." If not, then it should be postponed for a year rather than try to resuscitate the old Australasian Medical Congresses, which, by a formal resolution of last session, have been disbanded.

If an attempt be made to revive the old Australasian Medical Congress, I earnestly hope it may fail. Members should remember before joining such a Congress that the more successful it may prove, the more prominently it may loom in the public eye, the more the British Medical Association must recede with all that ripening power for good from which the profession has already gained such benefit.

From conversations with others, I believe these views represent those of 90% of members.

Yours, etc.,

RALPH WORRALL.

Sydney,
September 1, 1919.

Proceedings of the Australian Medical Boards.

SOUTH AUSTRALIA.

The undermentioned gentleman has been registered, under the provisions of the *Medical Act, 1880*, as a duly qualified medical practitioner:—

Reginald Francis Matters, M.B., M.S., Sydney, 1917.

Obituary.

WILLIAM EVAN McFARLANE.

Great regret has been felt by the inhabitants of Irvinebank and Stannary Hills, Queensland, at the death of William Evan McFarlane, which took place on August 17, 1919. He was born in 1866 and studied medicine at Edinburgh, where he took the degree of Bachelor of Medicine and Bachelor of Surgery in 1900. He came to Australia in 1907 and settled in Irvinebank, Queensland, in April of that year. He soon established himself firmly in practice and gained the confidence of a large clientèle. He was appointed surgeon to the Walsh District Hospital and also to the Stannary Hills Hospital. He took an active part in all local movements and was a generous contributor to every worthy cause. He was very popular with all his patients and the children of the district regarded him as a real friend. He was a keen chess player and an excellent host. Astronomy and geography attracted his attention and absorbed some of his spare time. He was a Fellow of the Royal Astronomical Society and a Fellow of the Royal Geographical Society. For some weeks William Evan McFarlane had the heavy task of attending to a large number of

persons, both in Irvinebank and in Stannary Hills, suffering from epidemic influenza. As the outbreak was dying down he himself was attacked and two days later he took to his bed; he died suddenly of heart failure.

Medical Appointments.

The appointment of Dr. I. McNeil as Public Vaccinator for the North-Western District, of Dr. F. R. Featherstone for the North-Eastern District and of Dr. W. G. H. Cuscaden (B.M.A.) for the Metropolitan District, is announced in the *Victoria Gazette*.

Dr. Keith H. Grieve (B.M.A.) has been appointed Government Medical Officer at Condobolin, New South Wales, Dr. Quirk (B.M.A.) having resigned.

The appointment of Dr. S. P. Parkinson (B.M.A.) as Government Medical Officer at Coopernook, New South Wales, is announced.

Dr. H. S. Newland (B.M.A.) and Dr. W. R. Cavenagh-Mainwaring (B.M.A.) have been appointed Honorary Physicians to the Adelaide Hospital.

Dr. E. F. Harrison has been appointed Officer of Health to the North Riding of the Shire of Kowree, Victoria.

Under the provisions of the *Health Act, 1911-1918*, the Brookton Local Board of Health has appointed Dr. R. P. Hodgson (B.M.A.) Health Officer at Brookton, Western Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxi.

University of Adelaide: Professor of Pathology.

Royal North Shore Hospital of Sydney, St. Leonards: Honorary Anæsthetist.

Royal Hospital for Women, Paddington: Resident Medical Officer.

Brewarrina District Hospital, New South Wales: Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society..
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Sept. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
Sept. 11.—Vic. Branch, B.M.A., Council.
Sept. 11.—N.S.W. Branch, B.M.A., last day for Nomination of Candidates for Election to the Federal Committee.
Sept. 12.—N.S.W. Branch, B.M.A., Clinical.
Sept. 12.—S. Aust. Branch, B.M.A., Council.
Sept. 12.—Q. Branch, B.M.A., Council.
Sept. 16.—Tas. Branch, B.M.A., Branch and Council.
Sept. 16.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Sept. 17.—W. Aust. Branch, B.M.A., Branch and Council.
Sept. 23.—N.S.W. Branch, Medical Politics Committee; Organization and Science Committee.
Sept. 24.—Vic. Branch, B.M.A., Council.
Sept. 25.—S. Aust. Branch, B.M.A..
Sept. 26—N.S.W. Branch, B.M.A., Election of Two Members to Federal Committee.
Sept. 26.—Q. Branch, B.M.A., Council.
Sept. 30.—Vic. Branch, B.M.A., Election of Two Members to Federal Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney.